

# **FORT JACKSON, SOUTH CAROLINA**

## **TERRAIN ANALYSIS**



PREPARED BY  
DAMES AND MOORE, WASHINGTON, DC

UNDER THE DIRECTION OF  
THE TERRAIN ANALYSIS CENTER  
US ARMY ENGINEER TOPOGRAPHIC LABORATORIES  
FORT BELVOIR, VIRGINIA 22060

APRIL 1979



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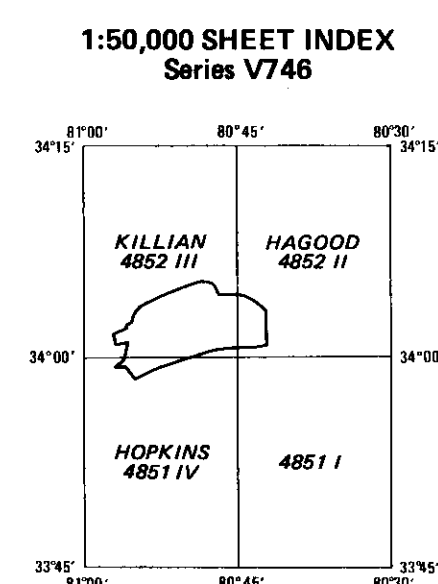


# FORT JACKSON, SOUTH CAROLINA

## TERRAIN ANALYSIS

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CONTRACT NUMBER DACA 87-78-C-0276

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# I. INTRODUCTION

## BACKGROUND

The requirement for this terrain analysis of Fort Jackson was validated by the Assistant Chief of Staff for Intelligence, Department of Army, included in the five-year Terrain Analysis Program, and assigned as part of the program element, "Terrain Analysis of Selected CONUS Army Installations." Responsibility for management and supervision of this program element developed in response to FORSCOM and TRADOC requirements, was assigned to the Terrain Analysis Center (TAC), U.S. Army Engineer Topographic Laboratories. TAC responsibility also included technical supervision and direction of designated troop units assigned to the program.

Scope and content of the topical coverage included in the terrain analyses of selected CONUS installations were developed jointly between representatives of TAC and FORSCOM, and later concurred in by TRADOC.

This study was prepared by Dames & Moore, Washington, DC (Contract No. DACA 87-78-C-0276) under the direction of TAC.

## PURPOSE

The major purpose of the program is to assist military planners in future stationing decisions. To achieve this purpose, planners must obtain an appreciation of the on-post terrain that includes among other things, knowledge of the suitability for conducting field training exercises involving maneuverability of troops and military vehicles. The degree of maneuverability that can be achieved is a function of several terrain factors including slope, surface configuration, soils, vegetative cover, and surface drainage, all of which are treated in the studies.

Planners concerned with troop stationing also need certain off-post information such as statistics on housing, schools, hospitals, and public utilities in urban areas near installations, as well as pertinent data on airfields and ports in the vicinity. These items are also treated in the studies.

Because the program under which this study was prepared is intended to serve troop stationing requirements, the support provided by the program to environmental requirements is only incidental. Some of the information contained in the studies may be useful as environmental baseline data, but the studies are by no means complete environmental inventories of the kind required in support of environmental impact assessments.

## SCOPE

In scope, the terrain analysis is a compendium of available data on the pertinent natural and manmade features of the reservation and an evaluation of their effects on tactical military operations. The program does not include basic research to fill gaps in these data although some short-term field investigations were performed to obtain ground truth and a general overall appreciation of terrain elements. Therefore, the scope of the analysis is limited primarily to those factors which have been documented by other authorities and to the results of analysis and evaluation of those factors by senior terrain analysts for topics such as cross-country movement, cover and concealment, and water resources.

The terrain analysis preparation process has necessarily involved analytical judgment in the selection of pertinent source data, resolution of data conflicts, recognition of interrelationships not previously made explicit, and the application of remote sensing to update certain critical, time-variant data such as vegetative cover and man-made features including roads, airfields, and facilities constructed outside of the cantonment areas.

## LIMITATIONS

The study naturally reflects limitations in the quality, amount, and currency of the source data on which it is based. Numerous field interviews and selective use of remote sensing were employed in an effort to assure presentation of the latest and best information. Within the relatively complex topical scope of the analysis, however, there are a number of aspects on which source data have not been generated with the focus or recency desired to meet objectives fully. As noted under Scope, the study effort was not designed to include basic research as a means of filling gaps in data.

By design, the presentation is cast at a level of data coverage consistent with stated objectives. Users interested in deeper pursuit of data are referred to the List of Sources in the back of the study.

## PRESENTATION

Maximum use of graphic presentation has been made throughout the terrain analysis. Supporting text is, as far as practicable, in tabular format keyed to the related graphics which follow. The primary map scale is 1:50,000. For Urban Area (Cantonment Area) the scale of the map is 1:9600 and for Off-Post Features the map scale is 1:1,000,000.

## STUDY AREA

The Fort Jackson military reservation is in central South Carolina on the eastern outskirts of the city of Columbia. The reservation extends approximately 11.7 kilometers (7.3 miles) north-south at its widest point and 24 kilometers (15 miles) east-west, and covers an area of approximately 21,449 hectares (53,000 acres). Fort Jackson lies wholly within Richland County.

The Fort Jackson military reservation is in the northwestern edge of the Coastal Plain Province. The Fall Line, or zone which marks the boundary between the younger, softer sediments of the Coastal Plain Province and the ancient, crystalline rocks of the Piedmont Province, lies approximately 6 kilometers (4 miles) west of the cantonment area. The surface of Fort Jackson is a gentle to moderately rolling plain of generally low relief. The highest elevation is 165 meters (540 feet) on an upland at Weir Tower in the west-central part of the reservation. The lowest elevation, less than 49 meters (160 feet), occurs in the flood plain of Colonels Creek in the extreme southeastern portion of the reservation and near Lake Katherine in the extreme southwestern corner of Fort Jackson. The eastern half of the reservation is drained by southeasterly flowing Colonels Creek. The western half of the reservation is drained by southwesterly flowing Gills and Wildcat Creeks. All streams on Fort Jackson eventually drain into the Santee River.

The climate of the area is humid continental, with hot, humid summers and mild winters. The average annual precipitation is 117 centimeters (46 inches), with maximum amounts occurring in mid-summer. The major portion of Fort Jackson is in forests, principally pine and scrub oak. Selective timber harvesting occurs in parts of the reservation and secondary growth woods are scattered throughout the area.



II. DESCRIPTION AND MILITARY ASPECTS OF TERRAIN

A. SURFACE CONFIGURATION

Fort Jackson is in the Coastal Plain Province, a region of low to moderate relief and gently rolling plains. The Fall Line, a zone that separates the younger, softer sediments of the Coastal Plain from the older, resistant rocks of the Piedmont Province, lies approximately 6 kilometers (4 miles) west of the cantonment area.

Flat to gently rolling low plains characterize the extreme western portion of the reservation, including a major part of the cantonment area and the alluvial plains occupied by Gills and Mill Creeks. Colonels Creek in the eastern part of the reservation flows in a relatively broad alluvial plain which is partially swamp. The major portion of the reservation is gently rolling, moderately dissected high plains.

LANDFORM TYPE	LANDFORM DESCRIPTION AND DISTRIBUTION	ELEVATIONS
1. LOW PLAINS	<p>The nearly flat alluvial plains of southwesterly flowing Gills and Wildcat Creeks, and the adjacent gently rolling, low relief plain of the cantonment area, occupy the extreme western portion of Fort Jackson. The valley of Gills Creek and its tributaries is partially swamp. Local relief is generally less than 18 m (60 ft). Slopes are predominantly between 0 and 3 percent on the alluvial plains; slopes in the cantonment area are predominantly between 3 and 8 percent.</p> <p>The upper valleys of Mill and Cedar Creeks occupy low plains along the southern boundary of the reservation. Prominent water bodies are Old Heises Pond and Twin Lakes in the valley of Mill Creek, and Weston Pond in the valley of Cedar Creek. Local relief is generally less than 12 m (40 ft); slopes are usually less than 3 percent.</p> <p>In the eastern portion of Fort Jackson, flat to gently sloping, swampy alluvial plains are occupied by Colonels Creek and its tributaries; local relief is less than 6 m (20 ft) and slopes are generally less than 3 percent. A gently rolling upland surface in the extreme southeastern corner of the reservation, adjacent to Colonels Creek, is characterized by local relief of 30 m (100 ft) and slopes ranging largely between 3 and 8 percent.</p>	<p>Elevations in the low plains range largely between 55 and 85 m (180 and 280 ft) above sea level. The lowest elevation on the reservation, less than 49 m (160 ft), occurs near the cantonment area (grid reference 041626) and in the alluvial plain of Colonels Creek, in the southeastern corner of the reservation (grid reference 244633). The highest elevation, approximately 104 m (340 ft), is at the head of Gills Creek (grid reference 133717).</p>
2. HIGH PLAINS	<p>Gently to moderately rolling, moderately dissected high plains occupy the major portion of the reservation. These high plains are interrupted by the nearly flat alluvial plains of Gills Creek, Cedar Creek, and Colonels Creek and their tributaries, and an irregularly distributed, gently sloping, low relief area in the central portion of the reservation near the headwaters of Cedar Creek. Local relief in the high plains area of the reservation is largely between 50 and 75 m (164 and 246 ft). Slopes are predominantly between 3 and 8 percent; along narrow stream valleys, slopes commonly exceed 15 percent.</p>	<p>Elevations in the high plains range largely between 90 and 140 m (295 and 459 ft) above sea level. The lowest elevation, approximately 61 m (200 ft), is adjacent to the alluvial plain of Colonels Creek in the southeastern portion of the reservation. The highest elevation, 165 m (540 ft), is at Weir Tower in the west-central part of the reservation (grid reference 122644).</p>

B. SURFACE DRAINAGE

All streams on Fort Jackson flow either into the Wateree River or the Congaree River. These rivers meet approximately 26 kilometers (16 miles) southeast of the reservation where they form the Santee River, the principal stream of the region. The Santee River continues in a southeasterly direction, eventually emptying into the Atlantic Ocean below Georgetown, South Carolina.

Streams on Fort Jackson are typical of those found elsewhere in the Coastal Plain Province; the surface pattern is linear dendritic and streams occupy relatively broad valleys with gentle regional gradients to the south and southeast. The eastern half of the reservation is drained by the southeasterly flowing Colonels Creek, a major tributary of the Wateree River. Streams in the western half of the reservation, Gills, Mill, and Cedar Creeks, flow south into the Congaree River. The major portion of the cantonment area is drained by Wildcat Creek, a west-southwesterly flowing tributary of Gills Creek.

The U.S. Geological Survey maintains two stream gages in the immediate vicinity of Fort Jackson. The Colonels Creek gage station is at the extreme southeast boundary of the reservation at Leesburg Road (State Highway 262). The Gills Creek gage station is at the intersection of Devine Street and U.S. Highways 76 and 378, approximately 1.5 kilometers (0.9 mile) southwest of Fort Jackson. Gage records indicate high water from December through April and low water from June through October. Because both stream gages have only been in operation since September 1966, the distribution of mean monthly discharges shown below for Colonels Creek and Gills Creek, is somewhat irregular.

With the exception of Wildcat Creek, whose channel has been graded and straightened in the cantonment area, all Fort Jackson streams flow in densely wooded, swampy flood plains underlain by soft, organic soils. Flooding may occur at any time throughout the year, but is most likely during high water periods. Vegetation in the flood plains restricts streamflow resulting in water remaining in channels for long periods of time. Flood plains are generally wet, which could severely impact trafficability at stream crossings. As a result of these wet conditions, there are no fords on the reservation.

Fort Jackson maintains 31 reservoirs for recreation and wildlife management. Weston Pond, in the extreme south-central portion of the reservation, is the largest reservoir, with an area of approximately 70 hectares (173 acres).

DRAINAGE CHARACTERISTICS

DRAINAGE CATEGORY	GENERAL	REGIME	WIDTH	DEPTH	VELOCITY AND DISCHARGE	BANKS	BOTTOM
WATERCOURSES							
Colonels Creek	Perennial stream occupies a narrow channel in a relatively broad, swampy flood plain. Drains eastern half of reservation and flows southeast into the Wateree River.	High water, December through April; low water, June through October. Flooding may occur during periods of high water; flood waters could last for several days due to dense flood plain vegetation.	Less than 3 m (10 ft), except in high water when widths could exceed 200 m (660 ft) in some areas as swampy flood plain is inundated.	Generally less than 1 m (3 ft), could exceed 2 m (6 ft) in high water.	Velocity is fairly high. At Leesburg gage, maximum discharge for period of record was 14 m³/sec (494 ft³/sec) on 10 June 1973. Minimum discharge was 0.3 m³/sec (11 ft³/sec) on 12-14 June 1970. Average discharge is 1.34 m³/sec (47.4 ft³/sec).	No appreciable banks; dense vegetation extends to stream channel. Soil is highly organic.	Generally sandy; may have some submerged grasses.
Gills Creek	Perennial stream occupies a narrow channel in a swampy flood plain. Drains most of western half of reservation. Flows southwest into Forest Lake, then south into the Congaree River.	Same as above.	Less than 3 m (10 ft), except in high water when widths could exceed 100 m (330 ft) as swampy flood plain is inundated.	Generally less than 1 m (3 ft). In high water, could exceed 2 m (6 ft) in channel.	Velocity is fairly high. At Columbia gage, maximum discharge for period of record was 44.5 m³/sec (1570 ft³/sec) on 3 March 1971. Minimum discharge was 0.3 m³/sec (11 ft³/sec) on numerous dates during 1967, 1969, and 1974. Average discharge is 2.24 m³/sec (79.1 ft³/sec).	Generally no appreciable banks; dense vegetation extends to stream channel. Soil is highly organic.	Generally sandy; may have some submerged grasses.
Wildcat Creek	A tributary of Gills Creek, this small perennial stream drains most of the cantonment area. A major portion of the channel above Semmes Lake has been graded and straightened; below Semmes Lake the channel has been straightened and most overbank vegetation removed.	High water, December through April; low water, June through October. Water rises rapidly after rains due to extensive basin development. Flooding may occur during high water periods.	Generally less than 3 m (10 ft).	Less than 1 m (3 ft).	Velocity is fairly high above Semmes Lake, moderate below; velocities increase rapidly during periods of high flow.	Less than 1 m (3 ft) where channel has been improved; no appreciable banks in downstream areas. Bank soils are highly organic.	Mostly sand with some gravel in improved areas.
Other Streams	Small perennial streams in narrow channels within densely wooded flood plains. May become seasonal or intermittent in upper reaches.	High water, December through April; low water, June through October. Flooding may occur during high water periods.	Less than 3 m (10 ft), except much wider in high water when adjacent swampy flood plains are inundated.	Less than 1 m (3 ft).	Velocities range from sluggish to fairly high. Peak discharges would probably not exceed 1.4 m³/sec (50 ft³/sec) and would be of short duration.	No appreciable banks; dense vegetation extends to stream channels. Soil is highly organic.	Generally sandy; may have some submerged grasses.
STANDING BODIES OF WATER							
Reservoirs (see table below)							
WET AREAS							
Swamps	Perennial swamps occupying densely wooded, poorly drained flood plains. Heaviest concentrations along Colonels and Gills Creeks.	High water, December through April; low water, June through October.	Variable; local areas of standing water.	Standing water is shallow.	Generally contain little water. During periods of high water, significant flow is restricted to stream channel.	No appreciable banks.	Layer of soft, highly organic, poorly drained soil.



B. SURFACE DRAINAGE (Continued)

RESERVOIRS

MAP NUMBER	NAME	GRID REFERENCE	APPROXIMATE WATER SURFACE AREA AT NORMAL CAPACITY	DAM HEIGHT*		DAM LENGTH*		CONSTRUCTION AND USE†
				STRUCTURAL	HYDRAULIC	STRUCTURAL	HYDRAULIC	
			hectares (acres)	meters (feet)	meters (feet)	meters (feet)	meters (feet)	
W1	Semmes Lake	054627	11.6 (28.7)	8.2 (27)	6.7 (22)	324 (1063)	302 (992)	Horizontal underdrain and concrete spillway.  Also used for golf course irrigation.
W2	Golf Course Hazard Pond 3	065621	0.08 (0.2)	No data	No data	No data	No data	
W3	Upper Legion Lake	064619	5.7 (14.0)	4.6 (15)	3.4 (11)	219 (720)	216 (710)	
W4	Lower Legion Lake	063617	1.9 (4.8)	4.6 (15)	3.4 (11)	149 (490)	143 (469)	
W5	Golf Course Lake 1	071619	0.9 (2.1)	6.1 (20)	4.0 (13)	84 (275)	81 (265)	
W6	Golf Course Lake 2	072620	0.6 (1.6)	4.9 (16)	4.0 (13)	82 (270)	70 (230)	
W7	Golf Course Hazard Pond 1	074620	0.16 (0.4)	2.4 (8)	1.8 (6)	44 (145)	35 (114)	
W8	Golf Course Hazard Pond 2	066614	0.08 (0.2)	2.1 (7)	1.5 (5)	52 (170)	41 (135)	
W9	Catfish Pond	067614	0.16 (0.4)	2.4 (8)	1.2 (4)	27 (90)	21 (70)	
W10	Golf Course Lake 3	068614	1.1 (2.8)	5.5 (18)	4.3 (14)	113 (370)	95 (313)	
W11	Washington Lake	063611	No data	No data	No data	No data	No data	Drained and being used for pasture.
W12	Upper Twin Lake	083614	1.8 (4.5)	3.7 (12)	2.4 (8)	67 (219)	56 (184)	
W13	Lower Twin Lake	084613	7.2 (17.8)	6.7 (22)	4.9 (16)	172 (565)	137 (450)	
W14	Price Pond	085618	0.8 (2.0)	2.4 (8)	1.2 (4)	137 (450)	108 (355)	
W15	Old Heises Pond 1	091618	4.3 (10.5)	4.0 (13)	2.7 (9)	195 (639)	176 (579)	
W16	Old Heises Pond 2	093617	0.6 (1.5)	3.7 (12)	3.0 (10)	66 (217)	55 (179)	
W17	Old Heises Pond 3	096618	0.5 (1.2)	4.3 (14)	3.0 (10)	107 (352)	93 (306)	
W18	South Pond	086605	1.7 (4.2)	6.7 (22)	5.2 (17)	176 (577)	151 (494)	
W19	Boyden Arbor Pond	057663	6.1 (15.0)	5.8 (19)	4.0 (13)	116 (382)	84 (275)	
W20	Lake in the Woods	086654	0.6 (1.5)	No data	No data	No data	No data	
W21	Clarke Pond	109689	1.8 (4.4)	3.0 (10)	2.1 (7)	118 (387)	105 (345)	
W22	Barstow Pond 1	124687	1.2 (3.0)	4.3 (14)	2.4 (8)	87 (286)	60 (196)	
W23	Barstow Pond 2	126687	1.1 (2.7)	2.1 (7)	0.9 (3)	82 (270)	47 (154)	
W24	Weston Pond	156620	70.1 (173)	14.6 (48)	11.3 (37)	518 (1698)	449 (1473)	
W25	Cobbs Pond	164702	7.8 (19.3)	4.6 (15)	3.4 (11)	158 (520)	104 (340)	
W26	Dupre Pond	173723	13.8 (34.0)	4.3 (14)	2.7 (9)	253 (829)	148 (485)	
W27	Messers Pond	196698	19.2 (47.3)	4.6 (15)	2.1 (7)	135 (442)	94 (308)	
W28	Odom Pond	225675	1.6 (3.9)	3.7 (12)	2.4 (8)	53 (174)	35 (115)	
W29	Chaver Pond	245678	1.0 (2.4)	No data	No data	No data	No data	Dam has been breached but a small pond remains.
W30	Upper Davis Pond	230661	8.7 (21.5)	4.6 (15)	3.4 (11)	346 (1135)	324 (1063)	
W31	Lower Davis Pond	228659	1.2 (3.0)	4.3 (14)	2.4 (8)	666 (2184)	644 (2112)	

\*Structural dimensions refer to dam height at outlet stream and maximum length of fill. Hydraulic dimensions refer to water depth at outlet stream and length of waterline along dam.

†All dams are earth fill with horizontal underdrains and/or vegetated spillways and are used for recreation and wildlife management except where noted.

STREAM DISCHARGES

MAP NUMBER	STREAM AND LOCATION	GRID REFERENCE	DRAINAGE AREA		MEAN ANNUAL DISCHARGE*		DISCHARGE AT 10-YR FLOOD		DISCHARGE AT 50-YR FLOOD		DISCHARGE AT 100-YR FLOOD	
			km <sup>2</sup>	(mi <sup>2</sup> )	m <sup>3</sup> /sec	(ft <sup>3</sup> /sec)	m <sup>3</sup> /sec	(ft <sup>3</sup> /sec)	m <sup>3</sup> /sec	(ft <sup>3</sup> /sec)	m <sup>3</sup> /sec	(ft <sup>3</sup> /sec)
1	Colonels Creek near Leesburg	247628	98.7	(38.1)	1.34	(47.4)	18.8	(664)	30	(1060)	35.1	(1240)
†	Gills Creek at Columbia	024608	154	(59.6)	2.24	(79.1)	38.5	(1360)	50.4	(1780)	55.5	(1960)
2	Wildcat Creek at SCL Railroad	042613	11.4	(4.4)	0.18	(6.5)	34	(1200)	52.4	(1850)	75	(2650)

\*Average discharge at gaging station is given for Colonels and Gills Creek; Wildcat Creek discharge was estimated.

†Stream discharge location not shown on map; outside reservation but pertinent.

MEAN MONTHLY DISCHARGES

MONTH	COLONELS CREEK NEAR LEESBURG, SC (SEP 1966 TO OCT 1977)		GILLS CREEK AT COLUMBIA, SC (SEP 1966 TO OCT 1977)	
	m <sup>3</sup> /sec	(ft <sup>3</sup> /sec)	m <sup>3</sup> /sec	(ft <sup>3</sup> /sec)
January	1.8	(62.1)	3.3	(118)
February	1.7	(59.3)	3.0	(106)
March	1.7	(61.4)	3.6	(126)
April	1.5	(52.0)	2.4	(86.3)
May	1.3	(44.2)	1.8	(63.1)
June	1.1	(38.7)	1.9	(67.3)
July	1.1	(39.6)	2.0	(72.2)
August	1.3	(45.1)	1.9	(66.7)
September	0.9	(33.3)	1.3	(47.4)
October	1.1	(37.4)	1.3	(47.6)
November	1.2	(42.4)	1.7	(61.2)
December	1.5	(54.2)	2.5	(89.0)



# FORT JACKSON, SOUTH CAROLINA TERRAIN ANALYSIS

## SURFACE CONFIGURATION

1. LOW PLAINS

Flat to gently rolling alluvial plains; local relief predominantly less than 18 m; slopes between 0 and 3%.
2. HIGH PLAINS

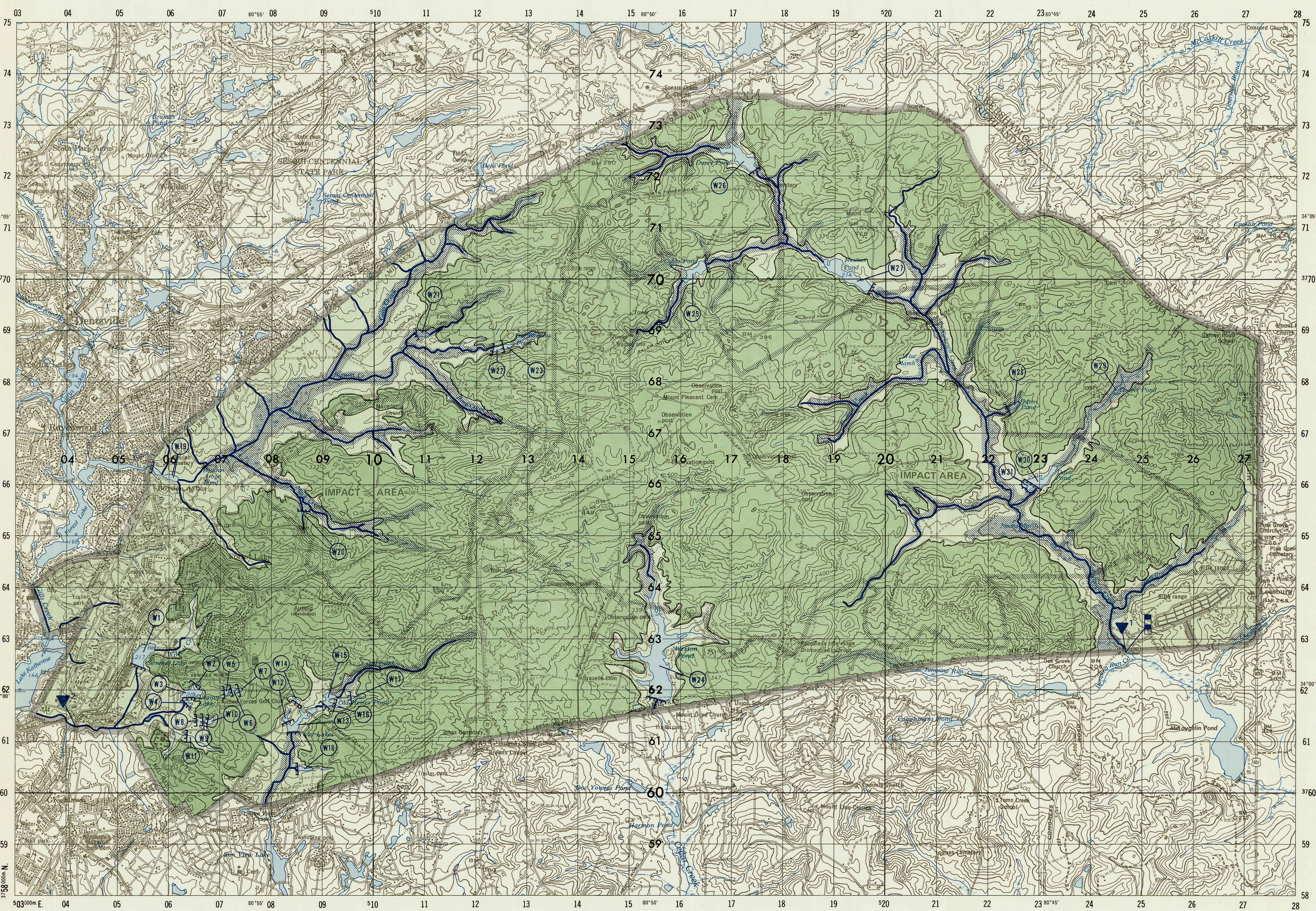
Gently to moderately rolling, moderately dissected upland plains; local relief predominantly between 50 and 75 m; slopes largely between 3 and 8%.

## SURFACE DRAINAGE

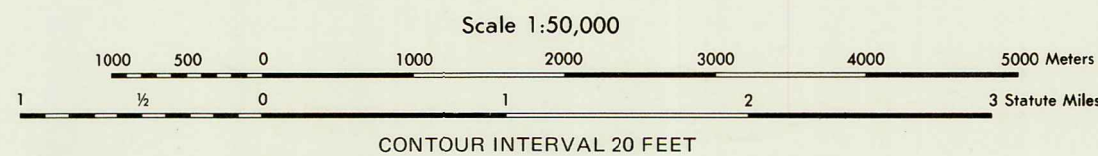
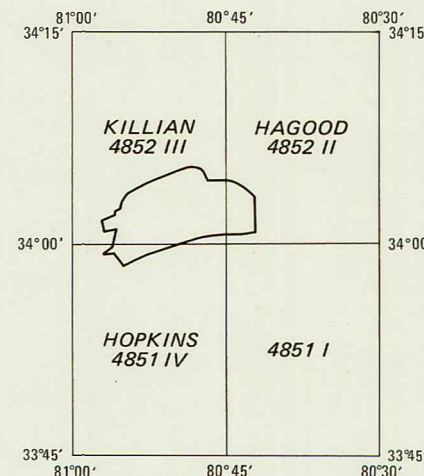
- Watercourse Width

< 3 m
- Earth Dam
- Reservoir
- Gage
- Stream Discharges
- Swamp

NOTE: Number refers to entry in table.



1:50,000 SHEET INDEX  
Series V746



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Laboratories, Fort Belvoir, Virginia. April 1979.



C. WATER RESOURCES

1. SURFACE WATER

Adequate data for an evaluation of the volume of water available from streams on Fort Jackson are lacking. U.S. Geological Survey gages in the immediate vicinity of the reservation have been in operation only since 1967. This period of record is generally inadequate for purposes of long-term planning of water resources. The table below presents the minimum recorded flow and the minimum 7-day average flow for this 11-year period of record for Gills Creek and Colonels Creek.

Fresh water on Fort Jackson is perennially plentiful from the lower portions of Gills Creek and Colonels Creek. The upper reaches of both these streams as well as the lower portions of Mill, Wildcat, and Cedar Creeks provide moderate to large quantities of fresh water on a seasonal basis. Other tributary streams on the reservation provide meager to small quantities of water on a seasonal basis and after a heavy rainfall. On Fort Jackson, high water is generally from December through April, low water from June through October.

Water in the area is generally soft and acidic because of the fairly extensive vegetative cover. Detailed water quality analyses for streams in the vicinity of Fort Jackson are limited. The data presented below were obtained as part of the South Carolina Department of Health and Environmental Control Monitoring Program in which different constituents were analyzed at different times during the period 1969 to 1977. Bacteria counts in local streams are fairly high; this condition could present problems to development.

Forest Lake, immediately west of Fort Jackson, is the present source of water supply for the reservation.

MAP UNIT	SOURCES	QUANTITY	QUALITY	DEVELOPMENT OF SOURCES
1	Gills Creek and Colonels Creek, except along upper reaches. The streams are 12 to 20 km (7.5 to 12.5 mi) apart and any point on the reservation is within 10 km (6 mi) of these sources.	VERY LARGE* quantities should be available throughout the year with ENORMOUS quantities during high water, from December through April. Minimum flow at gaging stations for both streams is 18,700 lpm (7,100,000 gpd). Average flow at gaging stations is 134,000 lpm (51,000,000 gpd) on Gills Creek and 80,500 lpm (31,000,000 gpd) on Colonels Creek.	Water is soft and slightly acidic. Most of upper Gills Creek and all of Colonels Creek is forested, resulting in greater acidity and generally lower sediment loads. Water quality is generally good in rural areas of the drainage basin. Gills Creek below Boyden Arbor Pond could be subject to variations due to residential development.	Access to streams outside the cantonment area would be limited by dense vegetation, soft soils, and seasonally high water levels in the flood plains, causing swampy conditions.
2	Upper reaches of Gills and Colonels Creeks, lower Wildcat Creek, Mill, and Cedar Creeks, and their respective tributary streams. Sources are 1 to 6 km (0.6 to 3.6 mi) apart and within 3 km (1.8 mi) of any location on Fort Jackson.	MODERATE to LARGE quantities are seasonally available from about December through April; SMALL to MODERATE quantities are available remainder of the year.	Based on regional factors, water is expected to be soft and slightly acidic. Watersheds are undeveloped, except for Wildcat Creek which drains the cantonment area. Water from Wildcat Creek is expected to show higher contamination levels.	Same as above, except Wildcat Creek which is generally accessible due to channel improvements and urbanization.
3	Upper reaches of tributaries are the only representative streams mapped. Sources generally 1 to 2 km (0.6 to 1.2 mi) apart.	MEAGER to SMALL quantities are available seasonally from about December through April and following rainfall.	Water is expected to be soft, but may contain undesirable levels of bacteria.	Same as Unit 1 above.

\*DEFINITION OF TERMS IN BOLD TYPE:

QUANTITY	LITERS PER MINUTE (lpm)	GALLONS PER DAY (gpd)
ENORMOUS	>40,000	>15,000,000
VERY LARGE	4000 - 40,000	1,500,000 - 15,000,000
LARGE	400 - 4000	150,000 - 1,500,000
MODERATE	40 - 400	15,000 - 150,000
SMALL	4 - 40	1500 - 15,000
MEAGER	>4	>1500

LOW FLOW DATA

STREAM AND LOCATION	MINIMUM RECORDED			MINIMUM 7-DAY AVERAGE		
	lpm	(ft <sup>3</sup> /sec)	DATES	lpm	(ft <sup>3</sup> /sec)	DATES
Gills Creek at Columbia	18,700	(11)	10 days in 1967, 1969, and 1974	18,700	(11)	21 to 27 October 1974
Colonels Creek near Leesburg	18,700	(11)	12 to 14 July 1970	20,400	(12)	8 to 14 July 1970

ANALYSIS OF SURFACE WATERS IN FORT JACKSON AREA, 1969 TO 1978†

	ROCKY FORD LAKE	FOREST LAKE	MILL CREEK AT STATE HIGHWAY 262
SOURCE DATA			
Map Number	1	2	3
Grid Reference	045664	040650	079598
Water Temperature °C (°F)	24/30/5 (75/86/41)	22/30/6 (72/86/43)	21/29/8 (70/84/46)
pH (Units)	6.2/7.8/5.5	6.8/7.6/5.8	6.3/9.0/5.4
CONSTITUENTS (mg/l)‡			
Alkalinity (as CaCO <sub>3</sub> )	6.1/22.0/2.0	10.2/30.0/2.0	6.2/24.0/0
Hardness (as CaCO <sub>3</sub> )	11.0/11.0/11.0	14.0/14.0/14.0	5.5/6.0/5.0
Chloride	6.0/9.0/4.0	5.7/7.0/5.0	10.7/63.6/1.0
Cadmium	0.06/0.1/0.03	0.6/0.1/0.03	0.08/0.1/0.04
Chromium	0.08/0.1/0.05	0.09/0.1/0.05	0.1/0.1/0.1
Copper	0.09/0.1/0.05	0.1/0.7/0.05	0.09/0.1/0.05
Iron	1.0/2.0/0.46	0.6/1.4/0.22	0.09/1.6/0.15
Lead	0.07/0.2/0.03	0.09/0.2/0.03	0.11/0.2/0.05
Mercury	0.001/0.006/0.0002	0.0004/0.001/0.00003	0.007/0.06/0.00006

†All values are expressed as mean/maximum/minimum.

‡For purposes of this study mg/l may be taken to be roughly equivalent to parts per million (ppm).

2. GROUND WATER

Fresh ground water is generally plentiful at Fort Jackson. The Tuscaloosa Formation, of Upper Cretaceous age, underlies all of Fort Jackson and is the primary source of ground water in the area. Small quantities of ground water may be available in the alluvial deposits along major streams; however, the feasibility of obtaining ground water from these deposits would have to be investigated.

The Tuscaloosa Formation is at the surface over the major portion of the reservation. This formation, which lies unconformably on a peneplained surface of older, crystalline rocks, dips southeast at approximately 6 meters per kilometer (300 feet per mile). As a result, the thickness of the formation varies across Fort Jackson from about 60 meters (200 feet) in the west to greater than 90 meters (300 feet) in the east. The formation consists of interbedded, generally unconsolidated, fine to coarse sand and clay, causing ground water to occur under both unconfined and confined (artesian) conditions. Ground water occurs under water table conditions in the upper part of

the zone of saturation. At depth, the permeable sand zones are frequently overlain by less permeable clay zones and the ground water exists under artesian conditions.

Ground water resources on Fort Jackson are not extensively used, as evidenced by only nine operating wells. Yields from these wells are relatively small, ranging from 40 to 400 liters per minute (15,000 to 150,000 gallons per day).

Ground water in the Fort Jackson area is suitable for human consumption; water quality is considered excellent. Total dissolved solids is generally less than 50 milligrams per liter; water standards are occasionally exceeded by slight concentrations of iron and manganese.

MAP UNIT	QUANTITY AND SOURCE	DEPTH	QUALITY	DEVELOPMENT OF SOURCES
1	LARGE‡ quantities of ground water may be available from the Tuscaloosa Formation, the primary source of ground water on Fort Jackson. This formation consists of tan, buff, and white crossbedded, micaceous, feldspathic quartz sand interbedded with red, brown, gray, and purple impure clay consisting primarily of kaolinite. Thickness of the formation generally ranges from a minimum of approximately 60 m (200 ft) in the western part of the reservation to over 90 m (300 ft) in the east. Ground water withdrawals at Fort Jackson have not been extensive. Existing wells yield 40 to 400 lpm (15,000 to 150,000 gpd). However, based on data near Fort Jackson, yields of approximately 1200 lpm (450,000 gpd) may be possible. Specific capacities of existing wells generally range from 6.2 to 37 lpm/m (0.5 to 3 gpm/ft). Well yields vary with the thickness of the sand zones in the subsurface.	Due to the interbedded nature of the sands and clays which compose the Tuscaloosa Formation, ground water occurs under both water table (unconfined) and artesian (confined) conditions. The upper part of the zone of saturation is under water table conditions; elevation of the water table is dependent upon seasonal variations in precipitation. The maximum seasonal fluctuation in a water table well in nearby Columbia was approximately 4.3 m (14 ft). Maximum depth to the water table occurs in interstream areas; reported depths in such areas are over 30 m (100 ft). Where clay zones are present near the surface, the water table may be perched and shallow ground water conditions can be expected. However, the saturated zones above these clay zones are usually thin and will not yield adequate supplies of ground water.  The permeable sand zones of the Tuscaloosa Formation are frequently overlain by less permeable clay zones. In such instances, ground water occurs under artesian conditions. Maximum yields are generally obtained from wells which penetrate these aquifers at depths ranging from 30 to 76 m (100 to 250 ft).	Ground water in the Tuscaloosa Formation is suitable for human consumption and is considered to be of excellent quality. Water quality analyses performed on samples from wells on Fort Jackson indicate a total dissolved solids content that generally ranges from 0 to 30 mg/l. Locally, iron and manganese have exceeded the recommended standards by small amounts. Results of chemical analyses from selected wells which penetrate the top of the Tuscaloosa Formation on Fort Jackson are presented in the table below. No biological or radiological contaminants have been observed in these water samples.	Ground water resources on Fort Jackson are not presently used to their maximum potential. The most promising areas for large supplies of ground water are in the eastern portion of the reservation where the Tuscaloosa Formation is the thickest. Wells yielding maximum amounts of ground water may range in depth from approximately 30 to 60 m (100 to 200 ft) in the west to 90 to 120 m (300 to 400 ft) in the eastern part of the reservation. Based upon wells drilled near Fort Jackson and on conversations with local drillers, individual wells, which extend through the Tuscaloosa Formation to the underlying crystalline rocks, may yield up to 1200 lpm (450,000 gpd). These wells should have a production casing approximately 30 cm (12 in) in diameter and gravel packed in a 45-cm (18-in) diameter drill hole. Wells can be developed to maximum capacity by surging for several hours after completion. It is recommended that a pumping test be conducted with a minimum duration of 24 hours to test the hydraulic characteristics of the formation.
2	MEAGER quantities of ground water may be available from organic clay and sand deposits in flat, swampy flood plain areas. No systematic studies of the water yielding properties have been performed.	Based upon their limited areal extent, it appears that these deposits are fairly thin and lie at shallow depth.	Since no systematic studies have been performed to evaluate these deposits, the quality of the ground water is generally not known. However, ground water samples in similar geologic environments have shown high color intensities, usually resulting from leaching of the overlying organic materials.	A detailed field mapping and drilling program would be required to evaluate the extent and the water yielding properties of these deposits. If appreciable quantities of ground water are available, the water would probably require treatment to remove the color. The swampy nature of the terrain somewhat limits access to well drilling sites. Since appreciable quantities of ground water are available from the Tuscaloosa Formation, Unit 1, this source should not be considered a high priority in terms of development.
3	No significant quantities of ground water are contained in the excessively drained, fine to coarse sand deposits which occupy many of the interstream areas on Fort Jackson. Infiltrating water percolates rapidly through the sands and enters the underlying Tuscaloosa Formation, Unit 1, the principal aquifer in the region.	These deposits are generally thin and lie at shallow depth.		From a water supply standpoint, these deposits are not considered important for development.

‡DEFINITION OF TERMS IN BOLD TYPE:

QUANTITY	LITERS PER MINUTE (lpm)	GALLONS PER DAY (gpd)
LARGE	400 - 4000	150,000 - 1,500,000
MEAGER	< 4	< 1500



C. WATER RESOURCES (Continued)

2. GROUND WATER (Continued)

SUMMARY OF DATA AND GROUND WATER QUALITY ANALYSES OF SELECTED WELLS IN THE TUSCALOOSA FORMATION

WELL NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Grid Reference	090675	124687	125686	165674	172675	199713	263635	162628	158628	158622	129629	093620	083615	087613
Depth m (ft)	32 (105)		31 (103)	76 (248)	38 (124)	38 (123)	60 (200)	56 (185)		90 (294)	70 (230)		33 (108)	
Estimated Yield lpm (gpd)	160 (60,000)	144 (54,000)	112 (42,000)	40 (15,000)	40 (15,000)	76 (28,500)	140 (52,500)	400 (150,000)	160 (60,000)	80 (30,000)	120 (45,000)	16 (6000)	140 (52,200)	12 (4500)
pH (Units)	6.0	5.1	5.6	5.0	6.1	5.8	5.2	5.5	6.2	5.6	5.9	5.1	6.3	6.8
Color (Units)	5.0	< 5.0	< 5.0	160	10.0	< 5.0	5.0	5.0	< 5.0	20.0	15.0	< 5.0	< 5.0	< 5.0
Specific Conductance (µmhos)	27.0	8.8	12.0	17.0	23.0	7.2	11.0	15.0	9.4	28.0	20.0	10.9	49.5	36.0
Constituents (mg/l)														
Alkalinity (as CaCO <sub>3</sub> )	2.1	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	8.1	6.3	0.0	12.0	10.0
Hardness (as CaCO <sub>3</sub> )	10.0	3.0	< 0.1	1.9	6.1	< 1.0	< 0.1	12.0	< 1.0	9.5	6.0	2.0	20.2	12.1
Calcium	1.3	3.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.6	4.3
Potassium	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Silica	9.8	6.4	0.0	9.5			4.4	7.4		8.7	5.3	7.5		
Total Dissolved Solids	22.0	0.0	6.0	10.0	14.0	2.0	0.0	5.0	24.0	5.0	39.0	1.0	28.0	24.0
Copper	< 0.025	0.075	< 0.025	0.026	< 0.025	< 0.025	< 0.025	0.04	< 0.025	< 0.025	0.17	0.08	0.126	< 0.025
Iron	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.2	< 0.1	0.713	< 0.1
Magnesium	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Manganese	< 0.03	< 0.03	< 0.03	0.10	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03	0.035	< 0.03	0.046	< 0.03
Zinc	2.0	0.55	0.07	0.46	0.97	< 0.015	0.049	0.67	0.50	3.4	3.2	0.098	8.4	0.039
Chlorides	1.3	2.0	1.7	3.5	3.6	1.3	2.3	0.44	1.5	0.0	0.2	3.1	7.1	5.4
Sulfates	2.6	0.9	0.0	0.0	0.0	0.0	0.5	25.0	0.0	0.0	3.1	0.6	0.0	0.0
Arsenic	< 0.005	< 0.01	< 0.01	< 0.01	0.0	0.0	< 0.01	< 0.005	0.0	0.17	< 0.005	0.01	0.0	0.0
Barium	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Cadmium	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025
Fluorides	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Lead	< 0.005	0.006	< 0.005	0.038			0.038	0.014		< 0.005	0.042	< 0.005		
Mercury	< 0.0002	< 0.0002	< 0.0002	< 0.0002			< 0.0002	< 0.0002		< 0.0002	< 0.0002	< 0.0002		
Nitrates (as N)	0.01	0.14	0.21	0.21	0.40	0.08	0.04	0.01	0.05	0.17	0.02	0.13	0.28	0.17
Silver	0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025
Sodium	1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.8	1.7



# FORT JACKSON, SOUTH CAROLINA TERRAIN ANALYSIS

## WATER RESOURCES

### SURFACE WATER

#### FRESH WATER PERENNIALY PLENTIFUL

1. **VERY LARGE\*** quantities available from middle and lower reaches of Gills and Colonels Creeks; **ENORMOUS** quantities usually available from December through April. Streams are less than 20 kilometers apart.

#### FRESH WATER SEASONALLY PLENTIFUL

2. **MODERATE** to **LARGE** quantities available from upper reaches of Gills and Colonels Creeks, lower Wildcat Creek, and other streams during period from December through April; **SMALL** to **MODERATE** quantities remainder of year. Streams are less than 6 kilometers apart.

#### FRESH WATER SCARCE

3. **MEAGER** to **SMALL** quantities available at times during high water and following rainfall. Sources less than 2 kilometers apart.

Reservoirs, see Section B, **SURFACE DRAINAGE**, for data.

Surface water sample location.

### GROUND WATER

#### FRESH WATER GENERALLY PLENTIFUL

1. **LARGE\*** quantities available from the Tuscaloosa Formation.

#### FRESH WATER SCARCE OR LACKING

2. **MEAGER** quantities available from alluvium.

3. Fresh water absent.

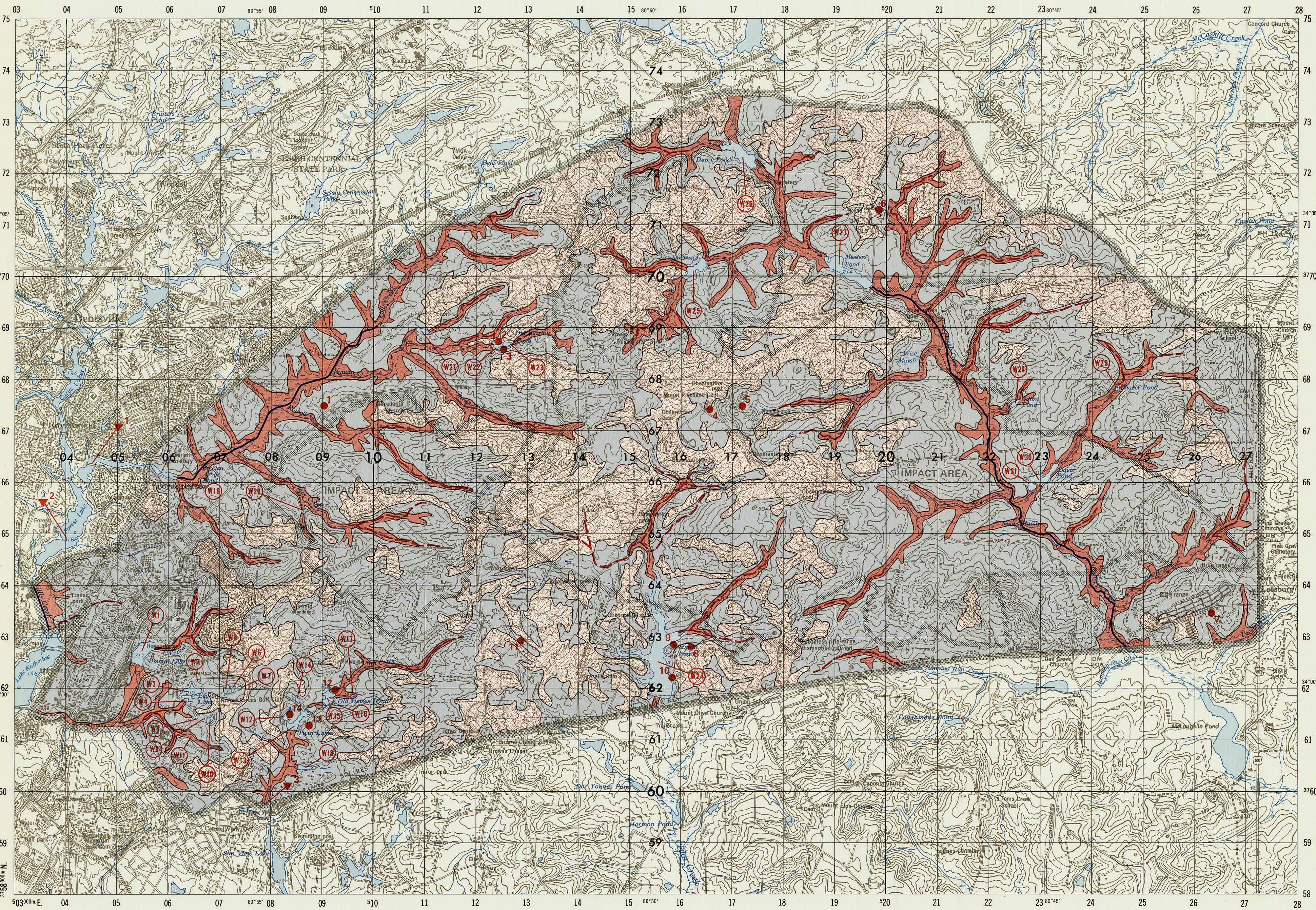
Well

\*Definition of terms in bold type:

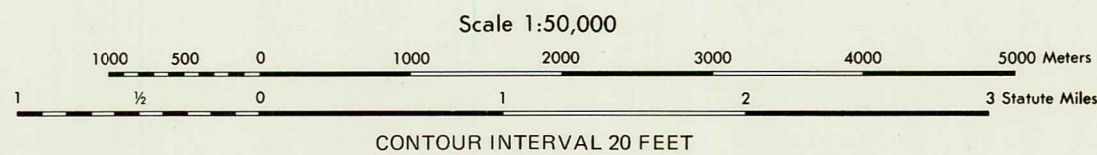
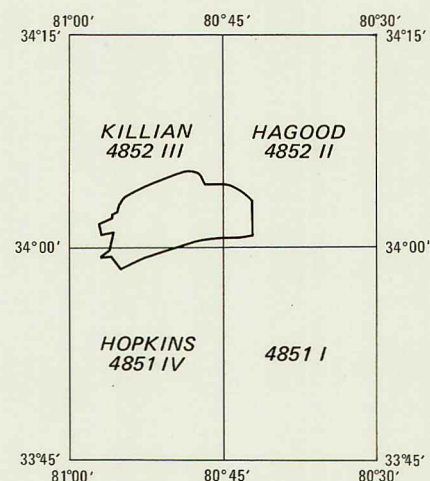
Quantity	Liters Per Minute (lpm)	Gallons Per Day (gpd)
<b>ENORMOUS</b>	> 40,000	> 15,000,000
<b>VERY LARGE</b>	4000-40,000	1,500,000-15,000,000
<b>LARGE</b>	400-4000	150,000-1,500,000
<b>MODERATE</b>	40-400	15,000-150,000
<b>SMALL</b>	4-40	1500-15,000
<b>MEAGER</b>	< 4	< 1500

NOTES: Number refers to entry in table.

For permissible concentrations of impurities in military water supplies, see U.S. Department of the Army Technical Manual TM5-700 Field Water Supply, July 1967, paragraph 19, or other applicable manuals or regulations.



1:50,000 SHEET INDEX  
Series V746



Prepared by Dames & Moore, Washington, DC, under the direction of the Terrain Analysis Center, U.S. Army Engineer Topographic Laboratories, Fort Belvoir, Virginia. April 1979.



D. ENGINEERING SOILS

The generalized pattern of soils on Fort Jackson is outlined in the table and accompanying map, which define the prevalent physical, hydrologic, and engineering characteristics of the soils, particularly as these relate to general planning. This information provides the means for comparison of the key physical characteristics of various soil units on the reservation and gives a preliminary indication of their suitability and/or limitations with regard to development. It is intended to guide, not to supplant, detailed site investigations in specific areas.

The map is based on information contained in soil surveys prepared by the U.S. Department of Agriculture, Soil Conservation Service.

Soils have been grouped into five map units. Each unit consists of soils that share certain characteristics, such as grain size distribution or permeability. The soil profiles summarized in the table are highly generalized and represent "average" typical profiles that can be expected for each major unit; actual conditions may vary to some extent, especially the thickness of the individual layers. Each of the five soil units is evaluated in terms of its limitations (slight, moderate, severe) for six common engineering applications. Major constraints, such as excessive permeability, wetness, or flooding, which limit use for development, are also identified.

The Coastal Plain soils at Fort Jackson are chiefly alluvial and marine deposits derived from the Tuscaloosa Formation, a unit consisting of unconsolidated arkosic sand and grit. Depth to hard, crystalline bedrock exceeds 60 meters (197 feet) throughout the reservation.

In terms of areal distribution, the most prevalent soils on Fort Jackson are Units 1 and 2. Unit 1 soils occupy many of the interstream areas and occur mainly in the central portion of the reservation. These soils are coarse-grained, excessively drained, and generally poorly graded, characteristics which would limit their use for sanitary facilities and the placement of heavy structures. Unit 2 soils are generally coarse-grained and well-drained, and occupy gently to moderately rolling upland plains and lower slope areas adjacent to alluvial valleys. These soils, which are generally suited to most engineering uses, cannot be used for sewage lagoons and shallow excavations because of their high potential for seepage and instability of cutbanks.

Unit 3 soils occur chiefly in the western portion of the reservation, specifically in the cantonment area and along the lower slopes of Gills Creek. These soils tend to become saturated after heavy rainfall, which limits their use for sanitary landfills and shallow excavations.

Most flood plains on Fort Jackson occupy nearly level valley bottoms which are partially in swamp. These soils, predominantly the organic soils of Unit 5, are very poorly drained, resulting in wet and seasonally flooded conditions which preclude their use for engineering development.

MAP UNIT	LANDFORM AND SLOPE	TYPICAL SOIL PROFILE*- LAYERS, THICKNESS OF LAYERS, DEPTH TO ROCK, UNIFIED ENGINEERING CLASSIFICATION (PROFILES NOT TO SCALE)		HIGH WATER TABLE DEPTH	PERMEABILITY	SHRINK-SWELL POTENTIAL	RATING AND MAJOR LIMITING SOIL CHARACTERISTICS FOR:							MAJOR SOILS SERIES <sup>†</sup> AND REMARKS
							SEWAGE LAGOONS	SANITARY LANDFILL	FOUNDATIONS FOR SMALL BUILDINGS	ROAD LOCATION	SHALLOW EXCAVATIONS	TRAFFICABILITY		
1	Gently to moderately rolling upland plains. Slopes generally between 2 and 15 percent.	cm	SP- SM	Coarse, poorly graded sands with some silts	Greater than 2 m (6 ft)	Greater than 51 cm/hr (20 in/hr)	Very low	Severe p, s	Severe p	Slight	Slight	Severe s, u	Moderate s, u	Major soil series-Lakeland sand. Unit occupies many interstream areas, particu- larly in central portion of reservation.
		110	SP	Brown sand										
		230+												
2	Gently to moderately rolling uplands and lower slope areas adjacent to flood plains. Slopes largely between 2 and 10 percent.	cm	SP- SM	Coarse sand and loamy sands with some clay	Greater than 2 m (6 ft)	5 to 51 cm/hr (2 to 20 in/hr)  At depth greater than 100 cm (40 in) 0.2 to 5 cm/hr (0.06 to 2 in/hr)	Low	Moderate to Severe p, s	Slight to Moderate p	Slight	Slight	Severe s, u	Moderate s, u	Major soil series-Blanton, Vaucluse, and Ailey series. Sands and sandy loams pre- dominate.
		100												
		190+	SC	Sandy loam and sandy clay loam										
3	Gently to moderately rolling lower slopes and terraces adjacent to flood plains and swamps. Slopes largely between 2 and 10 percent.	cm	SM	Loamy sand and sandy loam	0.3 to 1.3 m (1 to 4 ft)	5 to 15 cm/hr (2 to 6 in/hr)  At depth greater than 30 cm (12 in) 0.5 to 5 cm/hr (0.2 to 2 in/hr)	Low	Moderate s	Severe w	Moderate to Severe w	Slight	Moderate to Severe w	Dry-Moderate s Wet-Severe s, w	Major soil series-Pelion and Dothan loamy sands. Map unit is extensive in western portion of the reservation.
		30	SM- SC	Sandy clay loam and sandy clay										
		150+												
4	Nearly level flood plains. Slopes less than 2 per- cent.	cm	SM	Gray loamy sand	Less than 0.3 m (1 ft)	5 to 51 cm/hr (2 to 20 in/hr)  At depth greater than 30 cm (12 in) 2 to 5 cm/hr (0.6 to 2 in/hr)	Low	Severe f, w	Severe f, w	Severe f, w	Severe f, w	Severe f, w	Severe f, w	Major soil series-Rains sandy loam. Flood plain soils. Occur in narrow, minor stream valleys pri- marily in western portion of reservation. Occasional flooding occurs December through April.
		30		Gray sandy loam and sandy clay loam										
		155	SC											
200+	SM	Gray loamy sand												
5	Nearly level flood plains and swamps. Slopes less than 2 percent.	cm	OL	Black mucky loam	Less than 0.3 m (1 ft)	5 to 15 cm/hr (2 to 6 in/hr)  At depth greater than 75 cm (30 in) 15 to 51 cm/hr (6 to 20 in/hr)	Low	Severe f, w	Severe f, w	Severe f, w	Severe f, w	Severe f, w	Severe f, w	Major soil series-Johnston loam. Flood plain and swamp soils; contains or- ganic silts. Very poorly drained. Occasional flood- ing occurs December through April.
		75												
		150+	SM	Gray sandy loam										

\*These are typical average layers based on the major soil series; thicknesses and composition may vary considerably from those shown.

†Soils that have profiles almost alike make up a soil series. Each series is given a common name after the town or geographic feature near its initial observation. Many other minor soils are included in the map unit.

DEFINITIONS OF RATING TERMS
Slight - relatively free of limitations or limitations are easily overcome.
Moderate - limitations can be overcome with good planning and/or careful design.
Severe - limitations are serious and are difficult to overcome.

SOIL CHARACTERISTICS AFFECTING RATINGS
f - flooding
p - rapid percolation
s - slope
u - unstable soils
w - wetness



# FORT JACKSON, SOUTH CAROLINA TERRAIN ANALYSIS

## ENGINEERING SOILS

### COARSE-GRAINED SOILS

- 1. Excessively drained, poorly graded sands.
- 2. Well-drained sands and silty sands.

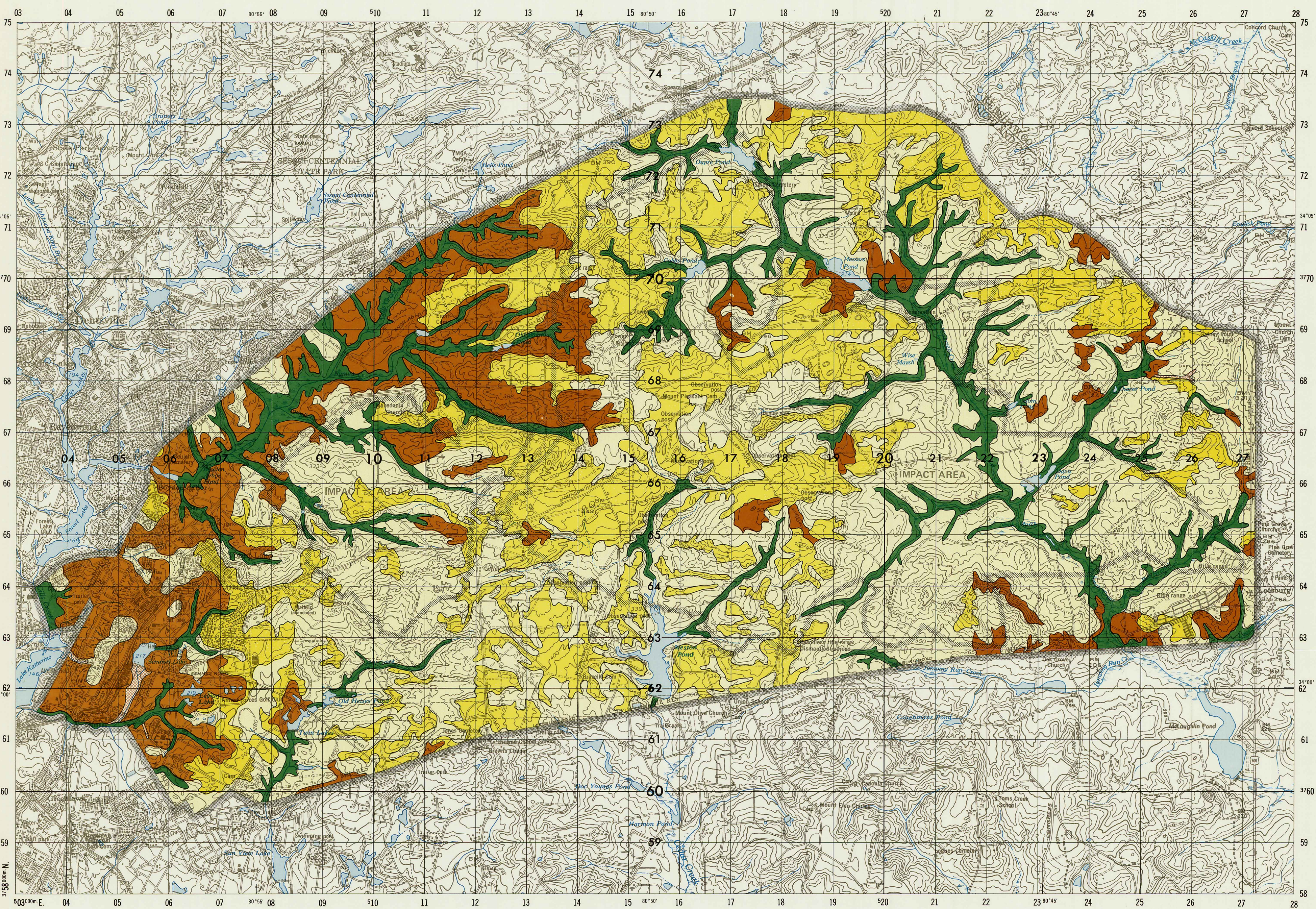
### COARSE-GRAINED AND FINE-GRAINED SOILS

- 3. Moderately well-drained fine sands, silts, and clays.
- 4. Sand, silt, and clay; flood plain soils.

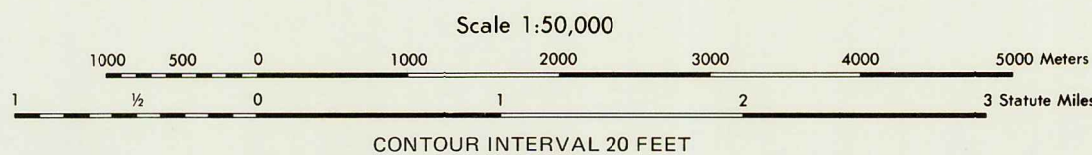
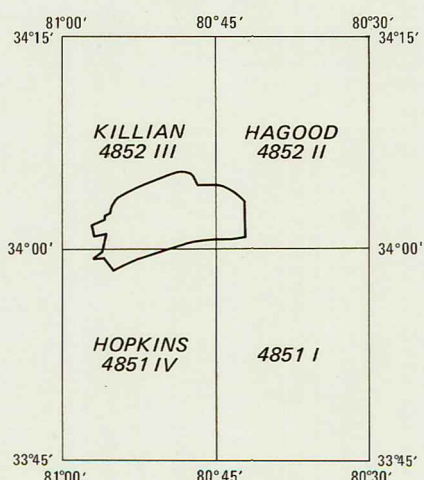
### ORGANIC SOILS

- 5. Muck over silt and fine sand; swamp deposits.

NOTE: Number refers to entry in table.



1:50,000 SHEET INDEX  
Series V746



Prepared by Dames & Moore, Washington, DC, under the direction  
of the Terrain Analysis Center, U.S. Army Engineer Topographic  
Laboratories, Fort Belvoir, Virginia. April 1979.



E. ENGINEERING GEOLOGY

The table below and the accompanying Engineering Geology map indicate the extent and distribution, geologic characteristics, and geotechnical properties of four engineering geology units on Fort Jackson. These units are evaluated as to their topographic and geotechnical suitability for construction sites and route alignments, foundation stability for supporting light and heavy structures, cut-slope stability for road and bridge construction, and potential sources of construction materials. Key geographic and geotechnical characteristics, such as relative resistance to erosion, suitability for excavation and compaction, and swelling potential are also evaluated to determine additional impacts or constraints to engineering development. The units are divided into two major suitability categories, those having some and those having few engineering uses.

All rock on Fort Jackson is entirely within the Coastal Plain Province. The youngest sediments are alluvial deposits consisting of sand, silt, and clay, mantled by organic materials. They occur in the flood plains of Gills and Colonels Creeks and in tributary valleys scattered throughout the reservation. These sediments, Unit 4 on the Engineering Geology map, have limited engineering suitability since they are very poorly drained, seasonally wet, and subject to frequent flooding.

The north-central portion of the reservation is characterized by fine- and coarse-grained sand of post-Eocene age. These deposits, Unit 3, are generally suited for light construction and are an excellent source of sand; however, cut banks are unstable in shallow excavations and excessive permeability precludes use for disposal of solid and liquid wastes.

Unit 2, which underlies Unit 3, consists chiefly of thin-bedded clay and sand. These deposits cap scattered uplands in the extreme northeastern and eastern portions of the reservation. They are generally suitable for a variety of light construction uses; however, densely wooded terrain associated with this unit could limit site accessibility locally.

Unit 1, the Tuscaloosa Formation of Upper Cretaceous age, crops out over the major portion of the reservation. This formation, which consists principally of unconsolidated sand and grit with occasional thin lenses of conglomerate, is generally suitable for most types of light construction, roads, and utilities. Densely wooded terrain, however, locally could limit access to portions of this unit.

MAP UNIT	TOPOGRAPHY	ROCK DESCRIPTION	PHYSICAL CONSTANTS	ENGINEERING EVALUATION	EXCAVATION FACTORS	PITS AND QUARRIES
1. Sand and grit with some conglomerate.	<p>Exposures over the major portion of the reservation including cantonment area. Occupies gently to occasionally moderately rolling, moderately dissected upland surfaces. Slopes rarely exceed 15 percent and most are between 3 and 8 percent.</p> <p>Mean local relief is 5 m (15 ft); maximum local relief is 40 m (131 ft). Elevations range from 49 m (160 ft) at the lower end of Wildcat Creek near Lake Katherine (grid reference 034616) to 165 m (540 ft) at Weir Tower in the west-central portion of the reservation (grid reference 122644).</p> <p>Drainage throughout the unit is moderately textured, with rectilinear dendritic patterns predominating.</p>	<p>The Upper Cretaceous Tuscaloosa Formation is the oldest unit cropping out on Fort Jackson. The formation consists principally of unconsolidated, crossbedded, kaolinitic, arkosic sand and grit. Thin lenses of conglomerate, composed of rounded quartz pebbles in a matrix of kaolinitic sand with iron oxide cement, are occasionally found in the formation. Beds of sandy to fairly clean, white kaolin up to 6 m (20 ft) thick are present in many places. The dominant color of the formation is characteristically creamy white with tints of purple, red, and brown. The surface is generally composed of light colored sands, either as a thin veneer or as massive units as much as 27 m (90 ft) thick.</p> <p>The Tuscaloosa Formation lies unconformably on a peneplained surface of older, crystalline rocks. The contact dips southeast at approximately 6 m/km (30 ft/mi). Total thickness of this basal Coastal Plain formation increases to approximately 90 m (300 ft) in the southeastern portion of the reservation.</p>	<p>Dry unit weight: 1574 kg/m<sup>3</sup> (98.4 lb/ft<sup>3</sup>) Moisture content: 2.9 percent Specific gravity: 2.67 g/cm<sup>3</sup> Initial void ratio: 0.704 Initial porosity: 41.3 percent Degree of saturation: 11 percent Plasticity: nonplastic Cohesion: 19.1 kN/m<sup>2</sup> (400 lb/ft<sup>2</sup>) Angle of internal friction: 33 degrees</p>	<p>Large expanses of gently to moderately rolling upland terrain on the reservation are generally suitable for most types of light construction. Dense vegetation could limit off-road access to potential construction sites east of the cantonment area.</p> <p>The uplands are suitable for straight to slightly curving alignments for roads. Minor bridging is required across tributary valleys; major bridging is necessary across portions of Gills and Colonels Creeks. Cut-and-fill, generally less than 3 m (10 ft), will be required locally, except at major crossings. Exposed slopes are potentially susceptible to piping erosion.</p> <p>The silty sands to poorly graded fine sands of this unit are ideal for foundations of lightly and moderately loaded structures; however, these materials are somewhat erodible. Settlement of lightly loaded structures in sandy surface soils will be negligible; any settlement should occur primarily during construction. No problems are anticipated with construction of roads and utilities. Although the ground water table is encountered at depths greater than 3 m (10 ft), provisions should be made for a vapor barrier under each structure and special considerations taken for perched water tables that may be encountered during construction.</p> <p>The Tuscaloosa Formation is an excellent source of sand, clayey sand, and kaolin. Numerous sand borrow pits are scattered throughout the reservation. Clayey sand from this unit is used locally in road construction, including base course for paved highways. Kaolin, mined in the area of Fort Jackson, has been used in ceramic products as well as in the manufacture of fire brick and face brick.</p> <p>The unit is generally suitable for the disposal of liquid and solid wastes; however, areas should be avoided where the subsurface soils are principally loose, well-drained sands. Borings are recommended prior to site selection.</p>	<p>Excavation is generally easy with hand and power tools. Moderate difficulty may be encountered with hand tools, particularly where conglomerate layers are present. Off-road access to most exposures east of the cantonment area is difficult due to dense vegetation.</p> <p>Cut faces will require protection against potential slumping of loose sands.</p>	<p>Borrow pits, principally sand, are scattered throughout the reservation. This unit is locally an excellent source of sand, clayey sand, and kaolin. Potential sites are in the eastern half of the reservation; however, access is difficult due to dense vegetation.</p>
2. Thin-bedded clay and sand.	<p>Caps scattered uplands in the extreme northeastern and eastern portions of the reservation adjacent to Colonels Creek. Occupies gently rolling, moderately dissected uplands with slopes ranging between 3 and 8 percent.</p> <p>Mean local relief is 6 m (20 ft); maximum local relief is 30 m (100 ft). Elevations range from 60 m (200 ft) in the area west of Colonels Creek (grid reference 239636) to 138 m (460 ft) at grid reference 257672.</p> <p>Drainage is fine to moderate textured and the pattern is typically dendritic.</p>	<p>Tertiary undifferentiated deposits, probably Eocene, consisting of thin-bedded red, white, and purple clays overlain by compact, red, crossbedded, and structureless sand and conglomeratic sand.</p> <p>These deposits unconformably overlie the light colored sands of the Tuscaloosa Formation, Unit 1.</p> <p>Maximum thickness of the unit is 6 m (20 ft).</p>	<p>Permeability: moderate to good Swelling potential: noncritical Plasticity: nonplastic</p>	<p>Generally suited for some engineering uses, including light construction and road alignments. Access to sites is good through existing roads and trails. Dense vegetation could locally hinder off-road site accessibility.</p> <p>Alignments for roads are generally available in upland areas. Bridging is required at stream crossings. Cut slopes are susceptible to piping erosion.</p> <p>Foundation stability is fair to good in the medium stiff, clayey substrata for the support of lightly loaded structures. Foundations anchored in upper sand layers should be avoided. Heavier structures should be anchored in the underlying Tuscaloosa strata, Unit 1.</p> <p>At several locations near Fort Jackson, clayey sand from this unit has been used in road construction. This material bonds well and makes a good surface for dirt roads or base course for paved highways.</p> <p>Although portions of this unit appear to be suitable for the disposal of liquid and solid wastes, extreme caution should be taken to insure that planned sanitary facilities are not placed in well-drained sand substrata. Borings are recommended prior to site selection.</p>	<p>Excavation is generally easy with hand and power tools. Access is good, except in areas not traversed by existing roads.</p> <p>Cut banks in sand layers tend to cave and slump on moderate slopes; sheeting will be required.</p>	<p>Potential source of clayey sand, particularly in the extreme northeastern portion of the reservation where the unit is thickest and access is generally good. Prospective sites should be thoroughly tested prior to development.</p>
3. Fine- and coarse-grained sand.	<p>Occurs principally in north-central portion of the reservation in the area between Gills and Colonels Creeks. Occupies gently rolling, moderately dissected uplands with slopes ranging between 3 and 8 percent.</p> <p>Mean local relief is 6 m (20 ft); maximum local relief is 30 m (100 ft). Elevations range from 79 m (260 ft) near Clarke Pond (grid reference 110690) to 157 m (460 ft) on the upland surface near Wildcat Road (grid reference 142712).</p> <p>Drainage throughout the unit is moderately textured and partially linear dendritic.</p>	<p>Post-Eocene sediments consisting of buff to cream colored, fine- and coarse-grained sand generally containing less than 6 percent clay.</p> <p>These sands unconformably overlie the Tuscaloosa Formation, Unit 1; the boundary between these units is often difficult to distinguish because they possess similar textural characteristics.</p> <p>Much of the sand was deposited by wind, although there is also evidence for water-laid deposits. This depositional environment has resulted in the unit having a highly variable thickness; in some places the sand occurs as a thin blanket, less than 1 m (3 ft) thick; in other places it is as much as 27 m (90 ft) thick.</p>	<p>Permeability: excessive Swelling potential: noncritical Plasticity: nonplastic</p>	<p>Generally suited for some engineering uses, principally light construction and road alignments in gently sloping areas. Access to sites is good through existing roads; however, off-road access could locally be slowed by clusters of dense vegetation.</p> <p>Uplands are generally suitable for straight to slightly curving road alignments. Bridging is required at stream crossings. Cut slopes are susceptible to caving and slump.</p> <p>Foundation stability is poor in loose sand layers. Structures should be anchored in the underlying Tuscaloosa Formation, Unit 1, to obtain maximum foundation support. Borings are recommended to determine depth to the Tuscaloosa strata prior to finalizing foundation design requirements.</p> <p>Post-Eocene sands have been mined on a moderate scale for fill and construction sand at several places, both on the reservation and in the surrounding area. The relative cleanliness of this sand also suggests it as a potential source of glass sand.</p> <p>This unit is not suitable for the disposal of liquid and solid wastes due to excessive permeability and seepage.</p>	<p>Excavation is easy with hand and power tools. Sands are well-drained and access is good.</p> <p>Cut banks tend to cave and slump, even on gentle slopes. Piping erosion has occurred in some cut slopes and embankments.</p>	<p>Excellent source of generally clean, well-sorted sand. Access is good through existing roads.</p>



E. ENGINEERING GEOLOGY (Continued)

MAP UNIT	TOPOGRAPHY	ROCK DESCRIPTION	PHYSICAL CONSTANTS	ENGINEERING EVALUATION	EXCAVATION FACTORS	PITS AND QUARRIES
4. Sand, silt, and clay, mantled by organic de- posits.	<p>Occupies the nearly flat, sometimes narrow, flood plains of Gills and Colonels Creeks and scattered tributary valleys. Flood plains are bounded by gently to moderately sloping, locally intensely dissected valley walls. Slopes generally range from 8 to 15 percent.</p> <p>Mean local relief is generally less than 2 m (6 ft); maximum local relief is 3 m (10 ft). Elevations range from 46 m (150 ft) along lower Wildcat Creek in the cantonment area (grid reference 034615) to 133 m (435 ft) in a tributary valley above Weston Pond (grid reference 180653) in the south-central portion of the reservation.</p> <p>This unit is very poorly drained and subject to frequent flooding. Streams occupy linear to broadly meandering channels.</p>	<p>Recent and Pleistocene alluvial deposits consist of gray sand, silt, and clay often mantled by black, organic deposits as much as 3 m (10 ft) thick. Alluvial deposits fre- quently contain rounded quartz gravel, clean quartz sand, and kaolinitic clays deposited by portions of streams draining areas where the Tuscaloosa Formation, Unit 1, crops out.</p> <p>Total unit thickness generally exceeds 5 m (16 ft).</p>	<p>Permeability: poor Swelling potential: noncritical Plasticity: nonplastic to low plasticity</p>	<p>Generally poorly suited to most engineering uses. Frequent flooding and seasonal high water table conditions would preclude its use for light and heavy structure emplacement and sanitary waste disposal facilities.</p> <p>Although the nearly level flood plains provide straight to curving alignments generally suit- able for roads, flooding would severely limit placement of transportation routes in this unit without the construction of high em- bankments to keep road surfaces above base flood elevations. Bridging is required.</p> <p>Foundation stability of the upper 10 m (33 ft) is generally poor, but improves with depth due to the presence of compacted sand and silt layers. Foundations for structures will require spread footings or slabs to prevent settling. Organic-rich upper surface layers may compress under load during wet periods.</p> <p>The unit is generally poor as a source for road fill due to wetness and excess humus; fines would preclude use as source for sand and gravel.</p>	<p>Alluvial deposits are easily excavated with power and hand tools. Access is limited due to dense vegetation and high water table conditions.</p> <p>Excavations are subject to flooding or seep- age. Walls of excavations would require sheeting to prevent slumping. Adequate drainage maintenance must be provided dur- ing construction.</p>	<p>No development. No sites recommended.</p>



F. SPECIAL PHYSICAL PHENOMENA

EARTHQUAKES

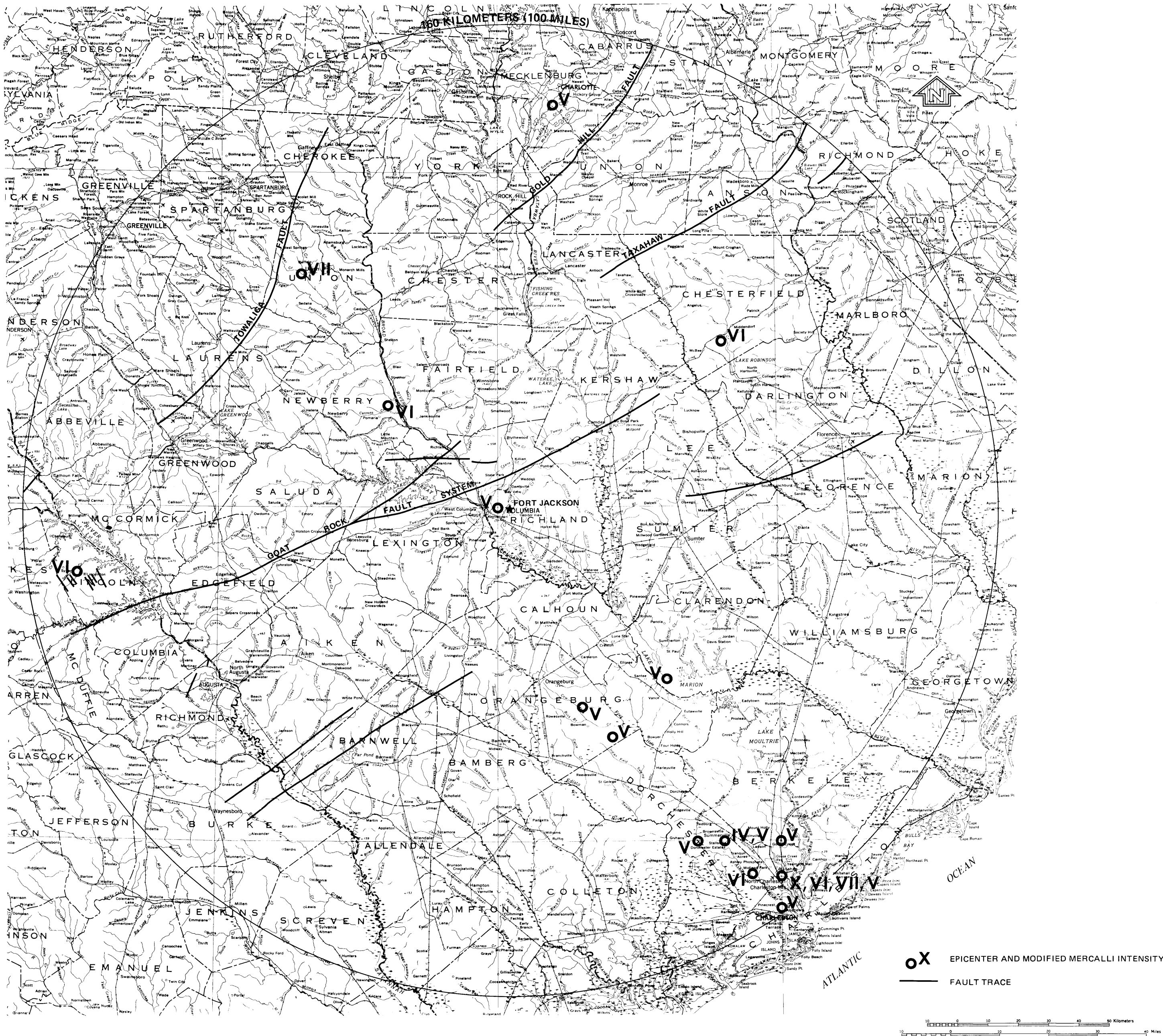
Fort Jackson is in a region of moderate earthquake activity. There have been 19 shocks with maximum intensities of V or greater (Modified Mercalli Scale) within a 160-kilometer (100-mile) radius of Fort Jackson since 1875. These epicenters are shown on the Regional Fault and Earthquake Epicenter map below, and are listed in the accompanying table. Although a majority of these earthquakes have been centered near Charleston, South Carolina, 160 kilometers (100 miles) southeast of Fort Jackson, some shocks have occurred elsewhere in the Coastal Plain and adjacent Piedmont Provinces.

The largest reported earthquake in the Fort Jackson region was the 1886 Charleston earthquake, which had an intensity rating of X (an Intensity X earthquake is a severe shock with major destruction). This earthquake, with an epicenter about 154 kilometers (96 miles) southeast of the cantonment area, is the strongest earthquake in the southeastern United States in historic times. The shock was felt over an area of about 5,180,000 square kilometers (2,000,000 square miles). The effects of the earthquake were strong; some damage was reported at Columbia, immediately adjacent to Fort Jackson. It is possible that the shocks felt near Fort Jackson were of Intensity VII, probably the greatest ground motion experienced there in recorded history.

Fort Jackson also has experienced shocks from occasional nearby earthquakes of low to moderate intensity. One of these tremors, in April 1964 near Columbia, was felt in portions of Richland, Lexington, Florence, and Fairfield Counties. The maximum reported intensity was V, with vibrations lasting over four minutes in Columbia. An earthquake of Intensity IV occurred at Columbia in September 1968; the tremors were felt over an area of approximately 1036 square kilometers (400 square miles).

There has been no correlation of earthquake activity with geologic structure in the region, although faulting is known. Of the faults shown on the Regional Fault and Earthquake Epicenter map, the most prominent trends northeasterly near Lake Murray. It is considered to be a splay of the Goat Rock Fault System and passes approximately 11 kilometers (7 miles) northwest of Fort Jackson at its closest approach. Investigations of the geologic and tectonic framework of the Charleston area since 1974 suggest the possible presence of previously unrecognized faulting in the basement rocks beneath Charleston. At present, no conclusive facts relate the rather anomalous seismicity of the Charleston area to geologic structure.

REGIONAL FAULT AND EARTHQUAKE EPICENTER MAP



SUMMARY OF INTENSITY V OR GREATER EARTHQUAKES WITHIN 160-KILOMETER (100-MILE) RADIUS OF FORT JACKSON, SOUTH CAROLINA (1875-1974)

YEAR	DATE	LOCALITY OF EPICENTER	NORTH LATITUDE (DEGREES)	WEST LONGITUDE (DEGREES)	CIRCULAR FELT AREA THOUSANDS OF km <sup>2</sup> (mi <sup>2</sup> )	MODIFIED MERCALLI INTENSITY
1875	1 Nov	Northern Georgia	33.8	82.5	64.7 (25)	VI
1879	13 Dec	Charlotte, NC	35.2	80.8		V
1886	31 Aug	Near Charleston, SC (two shocks)	32.9	80.0	5180 (2000)	X
1886	22 Oct	Near Charleston, SC	32.9	80.0	77.7 (30)	VI, VII
1886	5 Nov	Near Charleston, SC	32.9	80.0	77.7 (30)	VI
1907	19 Apr	Near Charleston, SC	32.9	80.0	25.9 (10)	V
1912	12 Jun	Near Charleston, SC	32.9	80.0	90.6 (35)	VII
1913	1 Jan	Union Co., SC	34.7	81.7	113.7 (43)	VII
1914	22 Sep	Near Summerville, SC	33.0	80.3	77.7 (30)	V
1933	19 Dec	Summerville, SC	33.0	80.2	Local	IV-V
1945	26 Jul	Lake Murray, SC	34.3	81.4	64.7 (25)	VI
1952	19 Nov	Charleston, SC	32.8	80.0		V
1959	26 Oct	Northeastern SC	34.5	80.2	13 (5)	VI
1960	23 Jul	Near Kittredge, SC	33.0	80.0	Local	V
1964	20 Apr	Columbia, SC	34.0	81.0		V
1967	23 Oct	Charleston-Summerville, SC	33.4	80.7		V
1971	19 May	South-central SC	33.3	80.6		V
1972	3 Feb	South-central SC	33.5	80.4		V
1974	22 Nov	Near Charleston, SC	32.9	80.1		VI

MODIFIED MERCALLI INTENSITY (DAMAGE) SCALE OF 1931 (ABRIDGED)

- I. Not felt except by a very few under especially favorable circumstances.
- II. Felt only by a few persons at best, especially on upper floors of buildings. Delicately suspended objects may swing.
- III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration like passing of truck. Duration estimated.
- IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.
- V. Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
- VI. Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
- VII. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motorcars.
- VIII. Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motorcars disturbed.
- IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
- X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.



# FORT JACKSON, SOUTH CAROLINA TERRAIN ANALYSIS

## ENGINEERING GEOLOGY

### SOME ENGINEERING USES

- 1. Sand and grit with some conglomerate.
- 2. Thin-bedded clay and sand.
- 3. Fine- and coarse-grained sand.

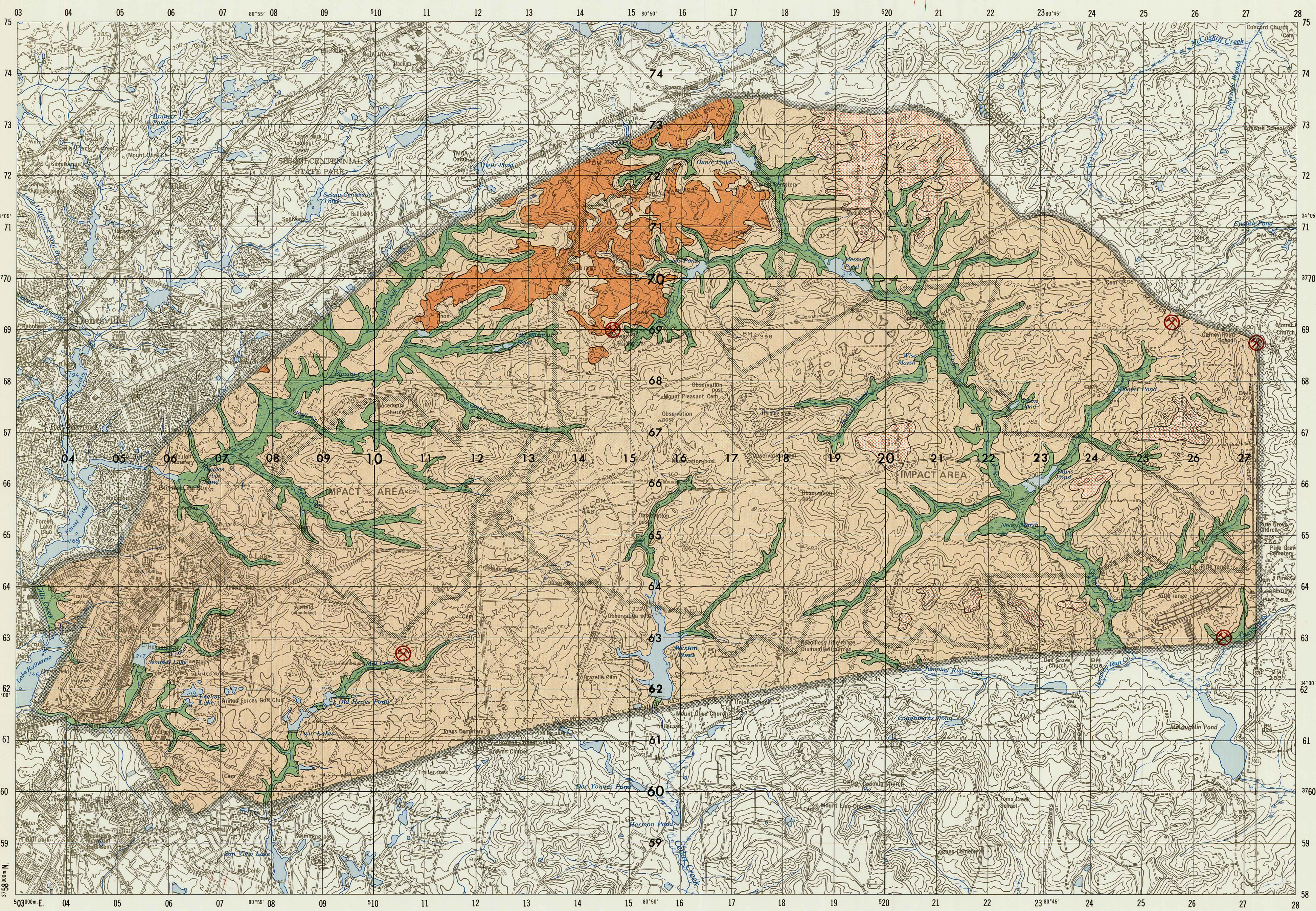
### FEW ENGINEERING USES

- 4. Sand, silt, and clay, mantled by organic deposits.

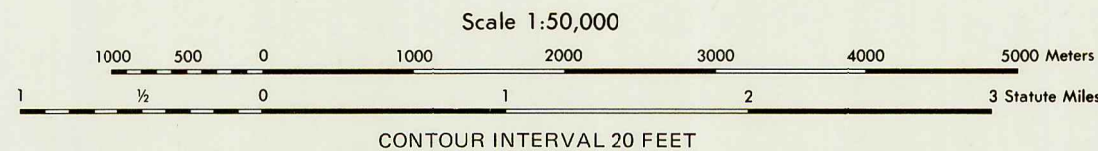
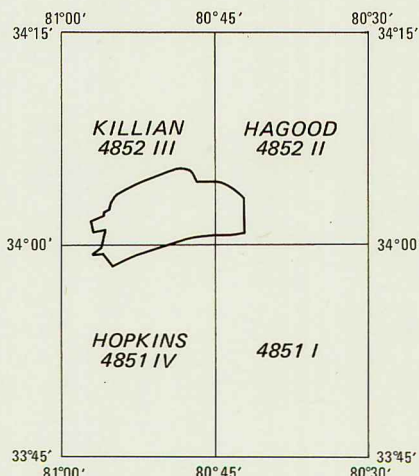
### CONSTRUCTION MATERIALS

- Borrow Pit (sand)

NOTE: Number refers to entry in table.



1:50,000 SHEET INDEX  
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Prepared by Dames & Moore, Washington, DC, under the direction  
of the Terrain Analysis Center, U.S. Army Engineer Topographic  
Laboratories, Fort Belvoir, Virginia. April 1979.



G. VEGETATION

Four major vegetative types, forest, scrub, grassland, and wetland, are significant to military training and operations at Fort Jackson.

Forests, composing 75 percent of the vegetation on the reservation, are widely distributed throughout the area. Conifers are by far the dominant trees and include loblolly, longleaf, slash, pond, and shortleaf pines, of which loblolly is the most common. Slash pine is frequently planted and other pines are regenerated naturally. Upland hardwood stands of various deciduous oaks and hickories occur in small patches of 2 hectares (5 acres) or less on more moist, fertile soils. Coniferous stands are intensively managed for lumber and pulpwood.

Scrub vegetation composes 13 percent of the vegetative cover, occurring throughout the reservation, principally on unmanaged forest tracts. Dominant species are scrub oak, including turkey, blackjack, and dwarf post oak. This vegetation characteristically has a high stem density, thus making passage on foot or in a vehicle difficult.

Grasslands compose 2 percent of the vegetation and occur as small isolated areas throughout the reservation. The plants are short, rarely over 1 meter (3 feet); dominant species include broomsedge, various lespedezas, rye, millet, and other herbs.

Wetland vegetation composes 10 percent of the vegetative cover, and is essentially in swamps of bottom land deciduous hardwood trees occurring within flood plains of perennial streams. Soils associated with this vegetation unit are seasonally covered by water and poorly drained. Major species are tupelo-gum, red maple, yellow poplar, and sweet gum.

Vegetative types providing the best cover and concealment possibilities for foot troops and vehicles are the dense stands of forest and scrub. Dense coniferous tracts offer the best concealment possibilities year-round and compose 65 percent of the vegetation of the reservation. Nearly open to medium density coniferous stands generally have a dense deciduous understory which provides good cover and fair concealment while trees are in leaf (early May to late October). The net value of scrub areas for these purposes is very low, since the high stem density severely restricts local mobility. Swamps provide fair to good cover and very good concealment while trees are in leaf, but wet soils and high undergrowth density severely limit mobility.

The accompanying Vegetation map shows the location and extent of major vegetative types on Fort Jackson, excluding upland hardwoods. Descriptive details of each map unit are included in the table below.

MAP UNIT	DESCRIPTION	DISTRIBUTION	REMARKS	COVER	CONCEALMENT
1. Evergreen needle-leaf trees; medium to dense spacing.	<p>Coniferous species, composing 80 percent or more of each stand; mainly loblolly pine with longleaf pine, slash pine (planted), some pond and shortleaf pine. Spacing between trees averages 1 to 5 m (4 to 15 ft). Crown cover density is 50 to 100 percent. Stem heights range from 5 to 15 m (15 to 50 ft) for most trees. Trunk diameters average 10 to 20 cm (4 to 8 in).</p> <p>Undergrowth occupies 10 to 20 percent of ground surface, with turkey oak, blackjack oak, dwarf post oak, and some black gum and persimmon as principal woody understory species. Common herbaceous plants include anise goldenrod, bracken fern, little bluestem, panic grass, and poison ivy. Undergrowth heights average 0.3 to 4 m (1 to 12 ft).</p>	Dominant vegetation type on Fort Jackson; occurs in large tracts throughout.	Mature trees in selected stands are harvested on 10-year rotation for lumber. Immature and poor quality trees are harvested for pulpwood. Most managed stands have been planted or naturally seeded after shelterwood or seed tree cuts. Stem density is often high, restricting local mobility.	Cover for foot troops from flat-trajectory fire of small arms is good to excellent.	Concealment from aerial observation is good year-round for foot troops and vehicles. Concealment from ground observation is fair to good for foot troops; ground concealment for vehicles is fair to poor. In very young stands concealment from the air is poor due to small tree size.
2. Evergreen needle-leaf trees; nearly open to medium spacing.	<p>Coniferous species, composing 80 percent or more of each stand; mainly loblolly pine with longleaf pine, some pond and shortleaf pine. Spacing between trees averages 6 to 8 m (20 to 25 ft). Crown cover density is 25 to 50 percent. Stem heights range from 9 to 24 m (30 to 80 ft). Trunk diameters are mostly 15 to 46 cm (6 to 18 in).</p> <p>Undergrowth occupies 20 to 30 percent of ground surface, with turkey oak, blackjack oak, dwarf post oak, and some black gum as principal woody understory species together with regenerating dominant trees. Common herbaceous plants include anise goldenrod, bracken fern, little bluestem, panic grass, and poison ivy. Undergrowth heights average 0.3 to 4 m (1 to 12 ft).</p>	Primarily large stands in the southern and western portions of the reservation.	Mature trees in selected stands are harvested on 10-year rotation for lumber. Stands over 60 years old are cut, leaving seed trees. Immature and poor quality trees are harvested for pulpwood. Most stands are naturally seeded former fields that generally have been thinned. Controlled burning is used to remove brush. Spacing between trees generally permits easy mobility.	Cover for foot troops from flat-trajectory fire of small arms is good.	Concealment from aerial observation is fair to good year-round for foot troops and vehicles. Concealment from ground observation is good for foot troops when understory plants are in leaf (early May through late October) and fair other times; ground concealment is fair for vehicles when trees are in leaf, poor otherwise.
3. Deciduous broad-leaf scrub; medium to dense spacing.	<p>Deciduous species compose 80 percent or more of each stand. Dominant species are various scrub oaks including turkey oak, blackjack oak, and dwarf post oak, with some black gum and persimmon. Spacing averages 0.3 to 2 m (1 to 5 ft). Crown cover density is 70 to 90 percent. Stem heights range from 2 to 5 m (8 to 15 ft). Stem diameters average 3 to 15 cm (1 to 6 in).</p> <p>Moderate to dense undergrowth consists mainly of younger dominant species and poison oak, sandwort, trailing arbutus, panic grasses, reindeer moss, little bluestem, with buckwheat, and other herbs. Undergrowth heights average 1 m (3 ft) or less.</p>	Occurs throughout the reservation. Scrub oaks are shade tolerant and compete with pines, becoming dominant in unmanaged areas.	Scrub oaks have little commercial value and are mechanically and chemically cleared from most sites; slash pine is then planted. Where loblolly and longleaf pine seed trees are present, all but these are cut to regenerate pines. Stem density of scrub oaks is normally very high; consequently local mobility is severely restricted and often impractical.	Cover for foot troops from flat-trajectory fire of small arms is fair to good.	When plants are in leaf, concealment from aerial observation is excellent for foot troops and good for small vehicles. Concealment from ground observation is excellent for foot troops and vehicles when trees are in leaf, poor otherwise.
4. Short grasses.	Grasses and forbs consisting mostly of broomsedges, sericea lespedeza, pennsicola bahia grass, love grass, winter rye, brown top millet, Kove and bicolor lespedeza, and chufa. Heights rarely exceed 1 m (3 ft) and average 0.1 m (0.5 ft) or less. Scattered trees or scrub do not exceed 10 percent crown cover density.	Small fields occur scattered throughout the reservation.	Some grassland areas are maintained, and the rest are cultivated and managed for wildlife food and cover.	Cover for foot troops from flat-trajectory fire of small arms is nonexistent.	Concealment for foot troops from aerial and ground observation is poor to nonexistent. Concealment for vehicles from aerial and ground observation is nonexistent.
5. Swamps; wet areas with over 50 percent trees.	<p>Deciduous swamp; seasonally wet; tree species present include tupelo-gum, red maple, yellow poplar, and sweet gum. Spacing between trees ranges from 3 to 9 m (10 to 30 ft). Crown cover density averages 30 to 80 percent. Stem heights range from 12 to 27 m (40 to 90 ft). Stem diameters range from 15 to 50 cm (6 to 20 in).</p> <p>Thirty to 80 percent undergrowth coverage is dominated by black alder, buttonbush, red bay, white bay, greenbrier, switch cane, cinnamon fern, lady fern, sedges, reedgrass, and various wildflowers. Undergrowth heights average 1 to 3 m (4 to 10 ft).</p>	Distributed throughout reservation mostly in narrow bands within the flood plains of permanent streams: Gills, Colonels, and Mill Creeks. Occupies low-lying, poorly drained soils.	Mature hardwoods are harvested on an irregular basis. These stands are essentially bottom land hardwoods on soils waterlogged most of the year, with standing water in spring and fall, and during flooding. Due to wet soils and often very dense undergrowth local mobility is highly restricted.	Cover for foot troops from flat-trajectory fire of small arms is fair to good.	Concealment from aerial observation is excellent for foot troops and vehicles when plants are in leaf. Concealment from ground observation for foot troops and vehicles is good to excellent when trees are in leaf, poor during leafless season.



# FORT JACKSON, SOUTH CAROLINA TERRAIN ANALYSIS

## VEGETATION

### FORESTS

- 1. Evergreen needleleaf trees; medium to dense spacing.
- 2. Evergreen needleleaf trees; nearly open to medium spacing.

### SCRUB

- 3. Deciduous broadleaf scrub; medium to dense spacing.

### GRASSLANDS

- 4. Short grasses.

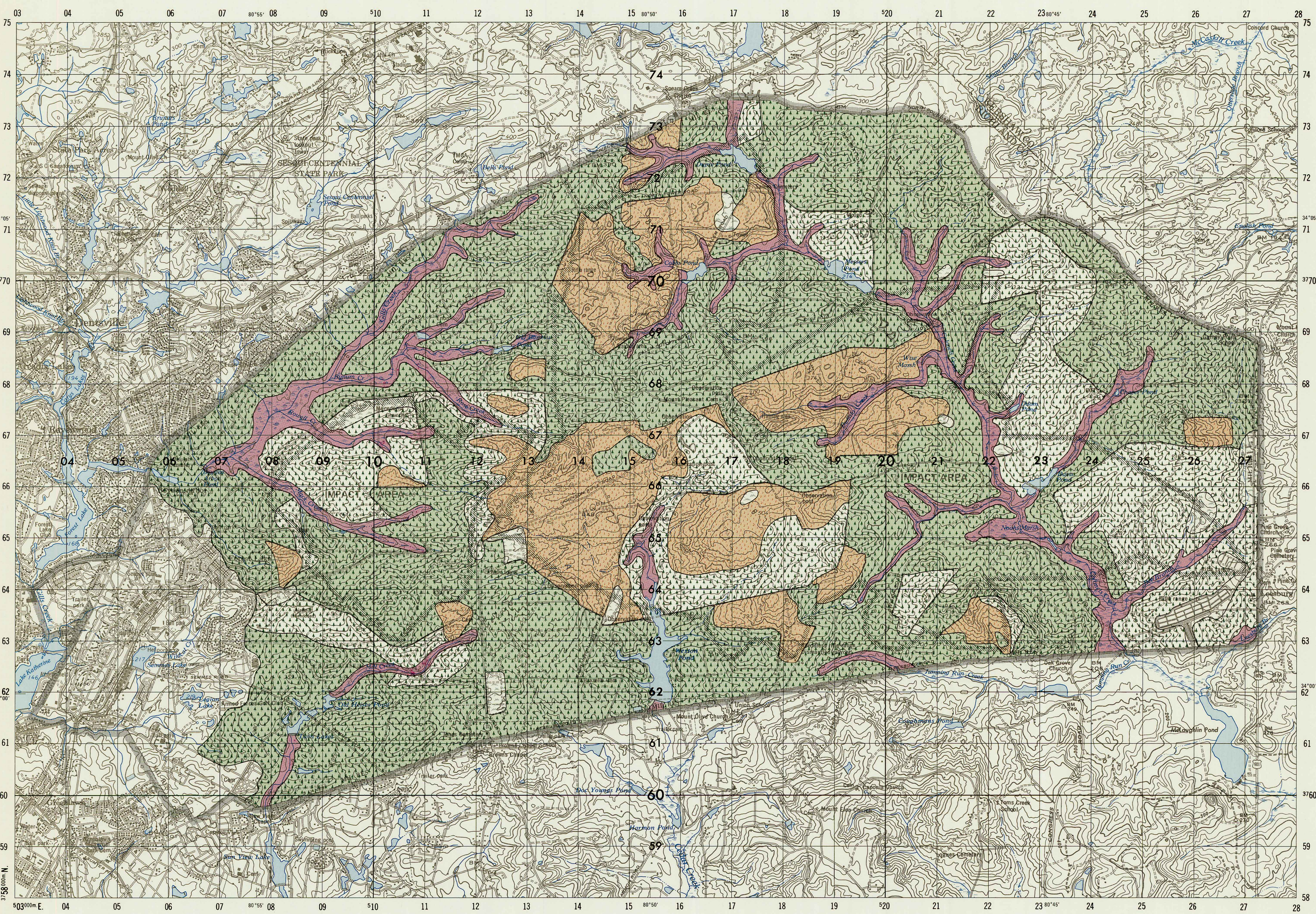
### WETLANDS

- 5. Swamps; wet areas with over 50% trees.

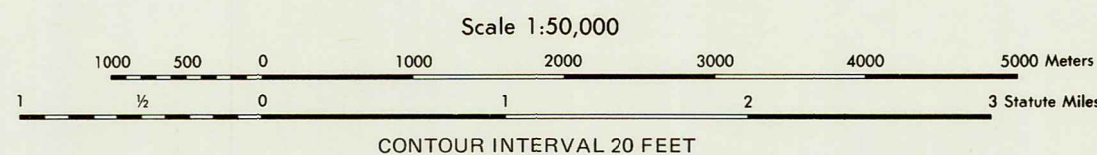
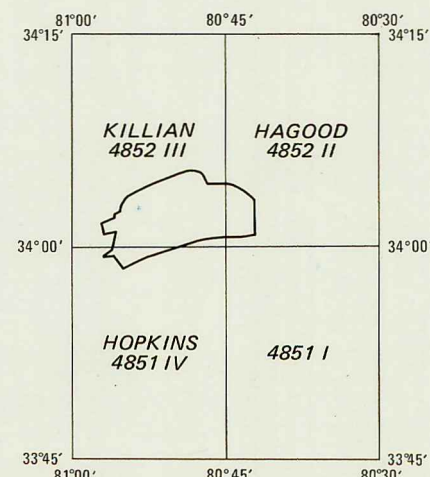
### OPEN

- 6. Built-up and heavily used areas. Vegetation is not a significant factor.

NOTE: Number refers to entry in table.



1:50,000 SHEET INDEX  
Series V746



Prepared by Dames & Moore, Washington, DC, under the direction  
of the Terrain Analysis Center, U.S. Army Engineer Topographic  
Laboratories, Fort Belvoir, Virginia. April 1979.



H. CLIMATE

The climate of Fort Jackson, South Carolina, may be classified as humid continental. Predominant climatic factors are its location in the lower latitudes and its proximity to the Appalachian Mountains to the west, which block the approach of unseasonable cold weather in winter. These factors result in a relatively narrow annual temperature range, from a mean daily temperature of 27.3°C (81.2°F) in July to 7°C (45.4°F) in January.

The Bermuda high, a semipermanent high pressure cell centered in the Atlantic Ocean, dominates summer weather. The influx of warm moist air from the south causes the days to be hot and humid. The mean daily maximum temperature in July, the hottest month, is 33.3°C (92.0°F); temperatures greater than 32.2°C (90°F) are experienced an average of 66 days a year. The highest temperature on record over a 92-year period, 1886 to 1977, was 41.7°C (107°F) in July 1952 and June 1954. Summer temperatures and humidities pose a severe health threat to unacclimatized personnel in strenuous training.

Winters are mild. January, the coldest month, has a mean daily minimum temperature of 1.1°C (33.9°F). Temperatures below 0.0°C (32°F) are experienced an average of 61 days a year. The lowest temperature recorded over the 92-year period was -18.9°C (-2°F) in February 1899.

The average annual precipitation is 1177.54 millimeters (46.36 inches), with maximum amounts occurring during July and August which average monthly rainfalls of 127 to 154 millimeters (5 to 6 inches); minimum

amounts occur during October and November when monthly averages are 76 to 102 millimeters (3 to 4 inches). Most summer precipitation is associated with showers and thunderstorms which occur an average of 54 days a year. The maximum 24-hour precipitation on record during the 92-year period was 194.56 millimeters (7.66 inches) in August 1949. Snowfall averages 33.02 millimeters (1.3 inches) a year, with notable accumulations occurring when cyclonic storms move northeastward along or off the Atlantic coast. Two such storms brought record accumulations to the Fort Jackson area: a storm in February 1914 produced a maximum 24-hour snowfall of 297.2 millimeters (11.7 inches) and a storm in February 1899 produced a maximum monthly snowfall of 299.7 millimeters (11.8 inches).

Prevailing winds are from the southwest during most of the year at an average speed of 6.7 knots (12.4 kilometers per hour or 7.7 miles per hour). Slightly higher wind speeds, 6.9 knots (12.9 kilometers per hour or 8 miles per hour), occur during the spring months. The highest wind speed on record for the 74-year period, 1904 to 1977, was 52 knots (97 kilometers per hour or 60 miles per hour) in March 1954.

The table below summarizes climatic and ephemeral data for Fort Jackson. Where noted, climatic data has been derived from the records of Columbia Metropolitan Airport in Columbia, SC, approximately 15 kilometers (10 miles) from the cantonment area. The close proximity of Fort Jackson and Columbia make conditions at the two sites virtually identical.

CLIMATIC SUMMARY \*

FORT JACKSON, SOUTH CAROLINA		LATITUDE 33°56'N		LONGITUDE 81°07'W		ELEVATION: 64 m (211 ft)										YEARS OF RECORD	
PARAMETER DESCRIPTION		UNIT OF MEASURE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL		
Absolute maximum temperature†	°C		28.9	28.9	33.9	35.6	38.3	41.7	41.7	41.1	41.1	38.3	32.2	28.3	41.7	92	
	°F		84	84	93	96	101	107	107	106	106	101	90	83	107	92	
Mean daily maximum temperature†	°C		13.8	15.4	19.2	24.9	29.2	32.4	33.3	32.8	29.7	25.1	19.4	14.4	24.1	37	
	°F		56.9	59.7	66.5	76.9	84.5	90.3	92.0	91.0	85.4	77.1	66.9	57.9	75.4	37	
Mean daily minimum temperature†	°C		1.1	1.9	5.5	10.7	15.3	19.6	21.3	20.8	17.5	10.7	4.8	1.2	10.8	37	
	°F		33.9	35.5	41.9	51.3	59.6	67.2	70.3	69.4	63.5	51.3	40.6	34.1	51.5	37	
Absolute minimum temperature†	°C		-15.0	-18.9	-7.8	-2.2	1.1	7.2	12.2	11.7	4.4	-5.0	-11.1	-15.6	-18.9	92	
	°F		5	-2	18	28	34	45	54	53	40	23	12	4	-2	92	
Mean number days with maximum temperature ≥ 32.2°C (90°F)†			0	0	#	2	6	14	20	16	8	#	0	0	66	11	
Mean number days with minimum temperature ≤ 0.0°C (32°F)†			16	14	6	1	0	0	0	0	0	1	9	14	61	11	
Normal heating degree-days (base 18.3°C/65°F) †			608	493	360	83	12	0	0	0	0	112	341	589	2598	37	
Normal cooling degree-days (base 18.3°C/65°F) †			0	5	25	56	233	414	502	471	289	87	5	0	2087	37	
Mean dew point temperature	°C		2.8	3.3	4.4	9.4	14.4	18.9	20.6	20.6	17.8	12.2	5.0	1.7	11.1	12	
	°F		37	38	40	49	58	66	69	69	64	54	41	35	52	12	
Mean percent relative humidity			72	69	65	64	66	69	72	73	75	74	70	71	70	12	
Mean precipitation†	mm		83.4	93.2	118.6	89.2	85.1	97.0	143.5	143.0	109.7	65.5	59.4	85.9	1177.5	37	
	in		3.44	3.67	4.67	3.51	3.35	3.82	5.65	5.63	4.32	2.58	2.34	3.38	46.36	37	
Mean number days with precipitation ≥ 2.54 mm (0.1 in)			5.0	6.2	8.5	5.5	5.6	5.5	7.6	6.7	5.8	4.5	4.4	5.6	70.9	10	
Absolute maximum precipitation†	mm		254.8	238.5	276.6	273.3	224.8	376.2	352.3	424.7	371.86	307.1	182.9	191.5	1791.46	92	
	in		10.03	9.39	10.89	10.76	8.85	14.81	13.87	16.72	14.64	12.09	7.20	7.54	70.53	92	
Absolute minimum precipitation†	mm		17.5	12.5	19.3	11.9	1.5	18.0	14.5	15.5	2.0	T	2.5	8.1	688.59	92	
	in		0.69	0.49	0.76	0.47	0.06	0.71	0.57	0.61	0.08	T	0.10	0.32	27.11	92	
Absolute maximum 24-hr precipitation †	mm		74.4	107.4	91.2	101.1	141.5	138.2	147.6	194.6	158.2	138.7	65.3	84.1	194.6	92	
	in		2.93	4.23	3.59	3.98	5.57	5.44	5.81	7.66	6.23	5.46	2.57	3.31	7.66	92	
Mean number days with thunderstorms †			1	2	3	3	6	10	13	10	4	1	1	#	54	30	
Mean snowfall	mm		5.1	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.9	33.0	10	
	in		0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.3	10	
Mean number days with snowfall ≥ 38.1 mm (1.5 in)			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	10	
Absolute maximum snowfall	mm		157.5	406.4	88.9	5.08	T	0.0	0.0	0.0	0.0	0.0	83.8	231.1	462.3	92	
	in		6.2	16.0	3.5	0.2	T	0.0	0.0	0.0	0.0	0.0	3.3	9.1	18.2	92	
Mean pressure altitude	m		0.6	11.6	24.7	33.2	35.4	39.3	31.4	33.8	27.7	16.2	5.8	0.0	21.6		
	ft		2	38	81	109	116	129	103	111	91	53	19	0.0	71		
Mean wind speed	knots		7.1	7.5	7.7	7.4	6.7	6.3	6.1	5.8	6.2	6.3	6.5	6.7	6.7	50	
	kmph		13.2	13.8	14.3	13.7	12.4	11.6	11.3	10.8	11.4	11.7	12.7	12.4	12.4	50	
	mph		8.2	8.6	8.9	8.5	7.7	7.2	7.0	6.7	7.1	7.3	7.5	7.7	7.7	50	
Prevailing wind direction			SW	SW	SW	SW	SW	S	NE	SE	SW	N	SW	SW	SW	50	
Fastest one-minute wind speed	knots		42.6	40.8	52.1	34.7	39.9	34.7	34.7	38.2	36.5	32.1	35.6	32.9	52.1	74	
	kmph		78.9	75.6	96.6	64.4	74.0	64.4	74.0	70.8	67.6	59.5	65.9	61.2	96.6	74	
	mph		49	47	60	40	46	40	46	44	42	37	41	38	60	74	
Percent frequency of surface wind speed ≥ 28 knots (51.9 kmph or 32.24 mph)			0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	12	
Percent frequency of surface wind speed ≥ 17 knots (31.5 kmph or 19.58 mph)			2.6	3.2	5.1	5.3	1.0	0.6	0.5	0.6	0.7	0.5	1.7	2.1	2.0	12	
Mean number days with surface wind ≥ 17 knots (31.5 kmph or 19.58 mph) and no precipitation	(at 1900 LST)		0.2	0.5	1.1	0.8	0.1	0.1	0.2	0.3	0.1	0.1	0.3	0.1	3.9	12	
	(at 0100 LST)		0.3	0.3	0.5	0.2	0.0	0.0	0.2	0.0	0.1	0.2	0.2	0.2	2.2	12	
	(at 0700 LST)		0.5	0.3	0.4	0.6	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.3	2.4	12	
	(at 1300 LST)		2.6	2.7	3.7	4.4	1.0	0.3	0.2	0.3	0.1	0.2	0.9	1.9	18.3	12	
Mean number days with surface wind 4 to 10 knots (7.4 to 18.5 kmph or 4.61 to 11.52 mph) and temperature 0.6° to 31.7°C (33° to 89°F) and no precipitation	(at 1900 LST)		15.1	13.1	17.6	18.5	21.8	20.2	21.9	21.0	17.5	14.5	11.9	13.7	206.8	12	
	(at 0100 LST)		11.6	12.3	15.3	16.7	17.1	15.1	16.7	13.1	13.4	12.9	10.7	12.2	167.1	12	
	(at 0700 LST)		9.9	11.4	13.0	15.2	18.4	18.9	18.9	16.6	14.1	14.3	11.3	10.9	172.9	12	
	(at 1300 LST)		14.6	13.9	14.6	14.6	17.8	12.9	11.0	11.5	18.8	20.5	17.3	18.2	185.7	12	
Mean number days with an occurrence of visibility ≤ 0.8 km (0.5 mi)			2.4	2.0	1.6	1.2	1.3	1.2	1.5	2.0	2.6	3.2	2.8	2.9	24.7	12	
Percent frequency ceiling ≤ 1524 m (5000 ft) or visibility ≤ 8.05 km (5 mi)			28.3	27.5	26.2	19.4	17.4	16.1	17.5	17.6	27.0	27.6	23.2	25.3	22.8	12	
Percent frequency ceiling ≤ 457.2 m (1500 ft) or visibility ≤ 4.83 km (3 mi)	(for 0000-0200 LST)		13.7	15.8	14.6	7.8	6.9	5.8	5.4	6.4	12.5	14.6	12.2	14.6	10.9	12	
	(for 0300-0500 LST)		18.5	18.7	17.8	13.5	14.7	13.3	14.7	15.3	22.4	20.4	15.6	16.9	16.8	12	
	(for 0600-0800 LST)		24.0	20.8	21.3	16.5	18.5	18.9	22.2	20.7	31.9	28.7	19.4	19.1	21.8	12	
	(for 0900-1100 LST)		20.6	18.4	16.8	10.0	8.4	4.8	7.1	6.4	16.0	17.1	14.1	17.3	13.1	12	
	(for 1200-1400 LST)		14.0	13.1	10.2	5.8	4.6	1.9	2.6	7.7	9.6	8.4	10.8	7.6	12		
	(for 1500-1700 LST)		10.9	9.2	9.1	3.4	3.5	1.4	0.7	2.1	6.0	7.5	5.6	7.1	5.5	12	
	(for 1800-2000 LST)		9.9	9.6	10.7	4.9	3.2	1.6	1.6	3.0	5.6	9.1	6.4	6.9	6.0	12	
	(for 2100-2300 LST)		11.7	11.3	11.3	6.0	3.2	2.3	1.4	3.7	7.2	11.4	7.8	8.9	7.2	12	
	(for 0000-0200 LST)		3.5	3.7	2.3	0.8	1.2	0.7	0.4	0.5	1.1	2.2	3.1	4.3	2.0	12	
	(for 0300-0500 LST)		5.0	6.1	3.1	2.5	3.9	3.1	3.0	4.2	5.4	6.0	5.1	4.4	12		
Percent frequency ceiling ≤ 91.4 m (300 ft) or visibility ≤ 1.61 km (1 mi)	(for 0600-0800 LST)		6.0	5.3	3.1	3.0	3.0	2.6	3.9	4.2	7.7	7.2	7.4	4.9	4.9	12	
	(for 0900-1100 LST)		2.4	2.5	1.2	0.3	0.0	0.0	0.0	0.3	0.4	0.4	2.2	2.1	1.0	12	
	(for 1200-1400 LST)		1.0	0.8	0.4	0.0	0.1	0.2	0.1	0.1	0.0	0.1	0.2	0.3	0.3	12	
	(for 1500-1700 LST)		0.9	0.2	0.3	0.0	0.0	0.1	0.0	0.1	0.3	0.0	0.2	0.8	0.2	12	
	(for 1800-2000 LST)		1.3	0.6	0.8	0.2	0.1	0.0	0.2	0.2	0.0	0.2	0.8	1.3	0.5	12	
	(for 2100-2300 LST)		2.9	1.0	1.7	0.3	0.1	0.0	0.1	0.2	0.2	0.8	1.5	2.7	1.0	12	
	(at 1900 LST)		11.7	11.1	12.1	12.4	10.4	6.9	6.3	8.5	11.4	15.7	14.7	12.2	133.4	12	
	(at 0100 LST)		13.1	11.2	13.6	15.0	15.6	13.1	11.8	14.7	13.1	16.8	15.4	14.0	167.4	12	
	(at 0700 LST)		9.4	9.6	9.6	12.2	11.6	9.9	8.3	11.2	8.9	11.4	12.8	10.9	125.8	12	
	(at 1300 LST)		9.5	8.7	10.0	10.1	7.5	5.9	4.5	6.7	7.8	12.2	14.4	10.9	108.2	12	
Mean number days with sky cover ≤ 30 percent and visibility ≥ 4.83 km (3 mi)	(at 1900 LST)		28.4	25.9	28.4	28.2	30.5	29.8	30.6	30.1	28.7	28.8	28.3	29.7	347.4	12	
	(at 0100 LST)		27.5	24.1	27.4	28.6	29.4	29.2	29.9	29.9	27.8	27.5	26.9	27.2	335.4	12	
	(at 0700 LST)		24.6	23.0	25.1	26.1	26.4	25.0	25.6	25.1	20.7	22.7	25.1	25.8	295.2	12	
	(at 1300 LST)		27.8	25.3	29.0	28.9	30.0	29.6	30.7	30.4	28.5	29.1	28.1	28.4	345.8	12	



H. CLIMATE (Continued)

CLIMATIC SUMMARY (Continued)*															
FORT JACKSON, SOUTH CAROLINA		LATITUDE 33°56'N		LONGITUDE 81°07'W		ELEVATION: 64 m (211 ft)									
PARAMETER DESCRIPTION	UNIT OF MEASURE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	YEARS OF RECORD
Mean number days with ceiling ≥ 609.6 m (2000 ft) and visibility ≥ 4.83 km (3 mi) and surface wind ≤ 10 knots (18.5 kmph or 11.5 mph)	(at 1900 LST)	24.1	20.8	20.6	21.1	27.5	24.8	27.0	27.0	26.8	26.7	24.5	25.5	296.4	12
	(at 0100 LST)	23.2	19.5	20.6	23.0	26.3	26.6	27.1	28.2	24.2	24.2	23.5	23.2	289.6	12
	(at 0700 LST)	19.3	18.7	19.0	18.7	21.6	21.7	21.7	23.7	17.3	19.7	21.8	21.8	245.0	12
	(at 1300 LST)	12.8	11.8	12.2	12.6	17.8	20.1	20.2	22.2	19.0	19.1	16.2	17.7	201.7	12
Mean number days with ceiling ≥ 762.0 m (2500 ft) and visibility ≥ 4.83 km (3 mi)	(at 1900 LST)	27.1	24.5	26.9	27.8	29.6	29.1	30.4	29.6	27.6	27.7	27.6	27.6	335.5	12
	(at 0100 LST)	26.1	22.8	25.6	26.3	28.0	27.8	28.4	29.1	25.0	25.1	26.0	25.8	316.0	12
	(at 0700 LST)	21.9	21.5	23.7	24.2	24.5	23.6	23.7	23.9	18.8	21.0	23.5	24.2	274.5	12
	(at 1300 LST)	25.1	23.0	26.6	27.2	28.9	28.6	29.6	29.4	25.8	26.7	26.0	26.7	323.6	12
Mean number days with ceiling ≥ 1828.8 m (6000 ft) and visibility ≥ 4.83 km (3 mi)	(at 1900 LST)	23.2	21.2	22.9	24.8	26.5	26.4	27.2	26.4	23.6	24.8	24.2	24.3	295.5	12
	(at 0100 LST)	22.2	20.1	23.3	24.4	26.5	26.3	27.2	27.8	22.7	22.6	23.3	23.0	289.4	12
	(at 0700 LST)	19.2	18.3	20.7	22.0	23.3	22.7	22.9	22.7	17.1	18.5	21.1	20.7	249.2	12
	(at 1300 LST)	21.6	19.9	21.5	22.1	23.7	23.8	23.7	25.1	21.8	23.4	23.2	23.0	272.8	12
Mean number days with ceiling ≥ 3048.0 m (10,000 ft) and visibility ≥ 4.83 km (3 mi)	(at 1900 LST)	21.1	19.2	21.0	22.8	24.2	24.7	25.6	24.8	21.8	23.5	22.6	21.6	272.9	12
	(at 0100 LST)	20.6	18.1	21.1	22.7	24.8	24.6	25.2	26.8	21.7	21.8	21.5	20.6	269.5	12
	(at 0700 LST)	17.6	16.5	19.0	20.8	22.0	21.6	21.8	22.1	16.0	17.1	19.1	19.6	233.2	12
	(at 1300 LST)	19.3	17.8	19.8	20.6	22.5	22.6	22.7	24.2	20.5	21.5	21.6	20.4	253.5	12
*Note: # = Less than 0.5 day; T = Trace; LST = Local Standard Time.															
*Data derived from the records of Columbia Metropolitan Airport in Columbia, South Carolina.															

EPHEMERIS FOR FORT JACKSON, SOUTH CAROLINA  
(EASTERN STANDARD TIME)

NAUTICAL TWILIGHT					NAUTICAL TWILIGHT					NAUTICAL TWILIGHT					NAUTICAL TWILIGHT				
DATE	BEGINNING	END	SUNRISE	SUNSET	DATE	BEGINNING	END	SUNRISE	SUNSET	DATE	BEGINNING	END	SUNRISE	SUNSET	DATE	BEGINNING	END	SUNRISE	SUNSET
January 1	0631	1825	0730	1726	April 1	0517	1939	0612	1845	July 1	0411	2044	0516	1939	October 1	0524	1903	0618	1809
January 11	0632	1832	0730	1734	April 11	0503	1948	0559	1852	July 11	0417	2041	0521	1937	October 11	0532	1849	0626	1755
January 21	0630	1841	0728	1744	April 21	0449	1957	0546	1900	July 21	0425	2035	0527	1933	October 21	0539	1838	0634	1743
February 1	0625	1851	0721	1754	May 1	0437	2006	0535	1907	August 1	0434	2025	0535	1925	November 1	0548	1827	0643	1732
February 11	0618	1859	0713	1804	May 11	0426	2016	0526	1915	August 11	0443	2014	0542	1915	November 11	0556	1820	0652	1723
February 21	0608	1908	0703	1813	May 21	0417	2025	0519	1923	August 21	0452	2001	0550	1904	November 21	0605	1815	0702	1718
March 1	0559	1914	0653	1820	June 1	0410	2034	0514	1930	September 1	0501	1946	0557	1850	December 1	0613	1813	0711	1715
March 11	0546	1922	0640	1828	June 11	0407	2040	0512	1935	September 11	0509	1931	0604	1837	December 11	0620	1814	0719	1715
March 21	0533	1930	0627	1836	June 21	0408	2044	0513	1938	September 21	0517	1917	0611	1823	December 21	0626	1818	0725	1719



I. CROSS-COUNTRY MOVEMENT

MAP UNIT	GENERAL TERRAIN CONDITIONS	MOVEMENT OF TRACKED VEHICLES*	MOVEMENT OF WHEELED VEHICLES†	MOVEMENT OF FOOT TROOPS
1. Nearly level to gently sloping, grass-covered uplands.	Chiefly grasslands occurring in small fields scattered throughout the reservation. Vegetation height averages 0.1 m (0.5 ft) or less. Soils vary from fine-grained sands, silts, and clays to coarse-grained, poorly graded sands. Slopes are less than 8 percent. Leesburg Area, South Carolina Army National Guard, (centered at grid reference 259631) is fenced.	Generally easy in any direction for both tank and APC.	Generally easy in any direction. Movement could be locally restricted in loose, poorly graded sands.	Unrestricted in any direction.
2. Nearly open to moderately dense coniferous uplands.	Nearly open to moderately dense coniferous forests occur mostly in the southern and eastern portions of the reservation. Principal vegetation is coniferous trees with trunk spacing ranging from 6 to 8 m (20 to 25 ft) and stem diameters varying from 15 to 46 cm (6 to 18 in). Undergrowth is moderate, averaging 0.3 to 4 m (1 to 12 ft) in height. Firebreaks, running in east-west directions, are approximately 90 m (300 ft) apart. Soils are mainly sands and silty sands. Slopes seldom exceed 8 percent.	Movement slowed slightly by wooded vegetation. Movement generally easy in open areas and firebreaks.	Moderately slowed by wooded vegetation and undergrowth. Movement generally easy in open areas and firebreaks.	Easy in any direction.
3. Gently sloping, scrub-covered uplands.	Tracts of medium to densely spaced deciduous scrub occur throughout the reservation. Stem density is normally very high with 0.3 to 2 m (1 to 5 ft) spacing. Stem diameters average 3 to 15 cm (1 to 6 in). Undergrowth is moderate to dense and height averages 1 m (3 ft) or less. Soils are mainly well-drained sands and silty sands having good bearing capacity with some areas of excessively drained, poorly graded sands having fair bearing capacity. Slopes are generally less than 8 percent with occasional variation up to 30 percent.	Movement moderately slowed by dense, wooded vegetation. Wet periods result in more severely affected trafficability conditions in some areas, particularly in the western portion of the reservation; APC less severely affected.‡ Movement in trace should be avoided. Visibility moderately to severely impaired in dense vegetation.	Movement generally poor. Mobility and visibility very limited in areas of particularly dense vegetation. Additional restriction during wet periods. Foot reconnaissance recommended prior to entering area.	Slightly slowed in areas of dense vegetation.
4. Gently sloping, forested uplands.	Medium to densely spaced forests occur in large tracts throughout the reservation. Coniferous trees are the predominant vegetation. Spacing between trees averages 1 to 5 m (4 to 15 ft). Trunk diameters average 10 to 20 cm (4 to 8 in). Firebreaks, running in east-west directions, are approximately 90 m (300 ft) apart. Predominant soils are sand and silty sands with good to fair bearing capacity.	Movement generally poor. Mobility and visibility severely limited in areas of dense vegetation. Movement easy in firebreaks. In some areas, particularly in the western portion of the reservation, movement is more severely affected during wet periods; movement in trace should be avoided. Foot reconnaissance recommended prior to entering area.	Movement generally poor. Mobility and visibility severely limited in areas of dense vegetation. Movement easy in firebreaks. Additional restriction during wet periods. Foot reconnaissance recommended prior to entering area.	Slightly slowed in areas of dense vegetation.
5. Poorly drained flood plains with numerous swamps.	Swamps with over 50 percent trees are distributed throughout the reservation, mostly in narrow bands within flood plains. Dominant vegetation is deciduous trees with medium to dense undergrowth. Tree spacing ranges from 3 to 9 m (10 to 30 ft) and stem diameters range from 15 to 50 cm (6 to 20 in). Undergrowth is moderate to dense, averaging 1 to 3 m (4 to 10 ft) in height. Soils of sand, silt, clay, and muck are generally wet with low bearing strengths. Water table is high, 0.5 m (1.5 ft), with seasonal standing water and occasional flooding.	Movement generally prohibited due to swampy, nonsupportive soil conditions. Some local movement possible during seasonal dry periods§. Caution should be observed in estimating soil bearing capacity.	Movement generally precluded due to swamps, soft and mucky soil, seasonal flooding, and dense vegetation. Seasonal dry periods allow limited mobility in open areas. Extreme caution should be observed in estimating soil bearing capacity.	Moderately to severely slowed in areas of dense vegetation. Extreme caution is required due to infestation of poisonous snakes.

\*Comments apply to the M-60 tank and the M-113 armored personnel carrier.  
†Comments apply to the M-35, 2½-ton truck and the M-151, ¼-ton truck.  
‡Wet period - The period when soil moisture is relatively high and the water table is raised. In most years this period extends from December through April. Wet periods, generally of short duration, may occur occasionally at other times of the year.  
§Dry period - The period when soil moisture is relatively low and the water table has been lowered by actively growing vegetation. In most years this period extends from June through October. Unusual climatic variations may drastically alter this time period.



# FORT JACKSON, SOUTH CAROLINA TERRAIN ANALYSIS

## CROSS-COUNTRY MOVEMENT

This map deals with cross-country movement, or movement away from roads, and is primarily intended for use in planning operations. For determining exact driving routes, reconnaissance on the ground is required. Data on the terrain factors and evaluations are generalized to suit the scale of the map. Many areas of minor areal extent, such as small tracts of forest, cleared areas, and depressions, are too small to portray. Areas with no color represent built-up areas and are not evaluated.

The predicted movement ratings are those believed to prevail in most years. Variations in these evaluations may occur from year to year and even within a season due to abnormal variations in the weather. The evaluations are based on terrain conditions as they are known at present. Future alterations of the terrain, such as timber clearing operations, artificial drainage, and road construction, would obviously change cross-country movement conditions.

### EVALUATION OF TERRAIN FOR CROSS COUNTRY MOVEMENT

#### PREDICTED MOVEMENT RATINGS FOR:

TANK (M-60) APC (M-113) 2½-TON TRUCK (M-35) ½-TON TRUCK (M-151) FOOT TROOPS

Dry Period\* Wet Period† Dry Period\* Wet Period† Dry Period\* Wet Period† Dry Period\* Wet Period† Dry Period\* Wet Period†

Good	Fair	Good	Fair	Good	Fair	Good	Fair	Good	Fair	Good	Good
Fair	Poor	Fair	Poor	Fair	Poor	Fair	Poor	Good	Fair	Good	Good
Fair	Poor	Fair	Poor	Poor	Unsuited	Poor	Unsuited	Fair	Unsuited	Fair	Fair
Poor	Poor	Poor	Poor	Poor	Unsuited	Poor	Unsuited	Fair	Unsuited	Fair	Fair
Unsuited	Unsuited	Unsuited	Unsuited	Unsuited	Unsuited	Unsuited	Unsuited	Poor	Unsuited	Poor	Poor

NOTE: Number refers to entry in table.

#### EXPLANATION OF RATING TERMS

Impact area; off limits to vehicles and foot troops due to the danger of unexploded munitions.

Good Conditions permit free movement in any direction. Terrain will permit 12 or more passes in one trace of an M-60 tank or permit at least one maneuver (starts, stops, sharp turns, or crossing of tracks) at one location.

\*Dry period - The period when soil moisture is relatively low and the water table has been lowered by actively growing vegetation. In most years this period extends from June through October. Unusual climatic variations may drastically alter this time period.

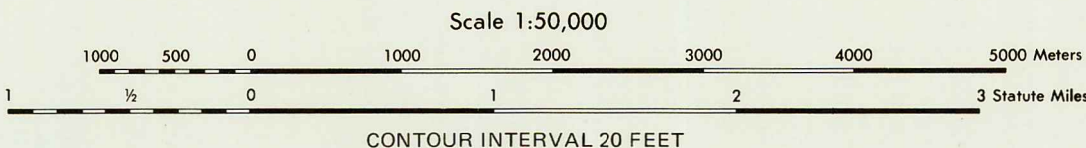
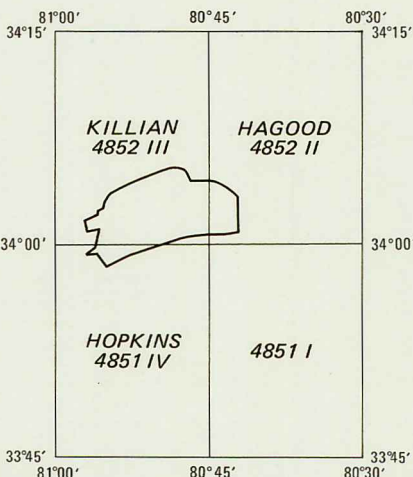
Fair Conditions moderately hinder progress or moderately restrict choices of direction for movement. Terrain will permit 3 to 12 passes in trace of an M-60 but maneuvering will be difficult.

†Wet period - The period when soil moisture is relatively high and the water table is raised. In most years this period extends from December through April. Wet periods, generally of short duration, may occur occasionally at other times of the year.

Poor Conditions severely hinder progress or greatly restrict choice of movement routes. Terrain will probably permit up to 3 passes in trace of an M-60. Very cautious driving required. Movement in trace should be avoided.

Unsuited Conditions preclude all but local movement. Engineer work required for vehicular movement.

### 1:50,000 SHEET INDEX Series V746



Prepared by Dames & Moore, Washington, DC, under the direction of the Terrain Analysis Center, U.S. Army Engineer Topographic Laboratories, Fort Belvoir, Virginia. April 1979.



J. LINES OF COMMUNICATION

1. ROADS

Approximately 330 kilometers (200 miles) of roads on Fort Jackson are depicted on the Lines of Communication map. The majority of hard-surfaced roads are in the cantonment area; east of the cantonment area is a maze of improved dirt (clayed) roads, unimproved dirt (sand) roads, and firebreaks. Many roads within this area are unnamed and unmarked. Unless treated with clay, roads in the sandy soil are loosely compacted and difficult to travel; even treated roads can be loosely compacted in places. Shoulders, unless paved, are usually not well defined and may have sandy, uncompacted sections. Unregistered vehicles may not go east of Wildcat Road, which runs north-south and is the only paved road completely traversing the reservation.

The borders of Fort Jackson are formed by four major roads. Leesburg Road, Route 601, and Percival Road are leased to and maintained by the State of South Carolina. The fourth boundary road, North Boundary Road,

is maintained by Fort Jackson.

No tank training is done by the U.S. Army at Fort Jackson; tank activity is conducted mainly by the National Guard. Most designated tank trails follow named roads; however, tanks make frequent use of firebreaks and unimproved dirt roads.

There are 11 road bridges on the reservation; box culverts spanning greater than 6.1 meters (20 feet) are treated in this study as bridges. Road bridges outside of the cantonment area are primarily timber, and all but one, (bridge number 1), are along improved dirt roads.

ROUTE NAME	ROUTE LOCATION (GRID REFERENCE) FROM TO		LENGTH OF SEGMENT km (mi)	MILITARY LOAD CLASSIFICATION W T*		ROUTE TYPE	SURFACE		SHOULDER		REMARKS
							CONSTRUCTION MATERIALS	WIDTH/CONDITION m (ft)	CONSTRUCTION MATERIALS	WIDTH/CONDITION m (ft)	
Alabama Rifle Range Road	085669	086669	0.1 (0.06)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Anderson Street	041619	047617	0.7 (0.4)	No data		All weather	Asphalt	7.3 (24)/good	No shoulder		
Artillery Road	164674	179620	6.1 (3.8)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		Loose sand in places.
Bakery Street	051620	053625	0.5 (0.3)	No data		All weather	Asphalt	7.3 (24)/good	No shoulder		
Beauregard Street	040626	044624	0.5 (0.3)	No data		All weather	Asphalt	6.7 (22)/good	Grass	0.9 (3)/good	
Boyden Arbor Road	061669	072659	0.6 (0.4)	29 30 (Posted 30)		All weather	Asphalt	6.7 (22)/excellent	Grass	0.9 to 1.5 (3 to 5)/good	Two lanes.
Bragg Street	044624	048621	0.5 (0.3)	No data		All weather	Asphalt	6.7 (22)/good	No shoulder		
Century Division Road											
Segment a	193622	199630	1 (0.6)	No data		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		Greater than 6.1 m (20 ft).
Segment b	199630	202687	7.4 (4.6)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		Wide in some places.
Segment c	202664	247701	4.8 (2.9)	18 18 (Posted 18)		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		Ditched.
Chaingang Road	210650	233645	2.6 (1.6)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		Loose sand in places.
Chestnut Road	076621	076639	1.5 (0.9)	No data		All weather	Asphalt	6.7 to 7.3 (22 to 24)/excellent	Grass	1.5 to 2.4 (5 to 8)/good	
Cook School Road	227712	245701	2.2 (1.3)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Delaware Rifle Range Road											
Segment a	091674	092674	0.1 (0.06)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Segment b	092675	092674	0.1 (0.06)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Dixie Road											
Segment a	057648	169685	12.8 (7.9)	No data		All weather	Asphalt	6.7 (22)/good	Asphalt and grass	1.5 to 1.8 (5 to 6)/good to poor	Entire paved surface has painted centerline. Shoul- der near cantonment is 0.6 m (2 ft) paved and 1 m (3 ft) grass. Past Wildcat Road shoulder is grass and sand, poor condition.
Segment b	169685	203733	6.9 (4.3)	14.5 14.5		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		
Engineer Street	049622	051621	0.2 (0.1)	No data		All weather	Asphalt	12.2 (40)/good	No shoulder		
Enon Road	098683	114694	2 (1.3)	No data		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		Ditched.
Ewell Road	053614	072601	2 (1.2)	No data		All weather	Asphalt	6.7 (22)/excellent	Grass	1.8 (6)/good	
Florida Rifle Range Road	082666	082667	0.05 (0.03)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Forest Drive	050646	057648	0.8 (0.5)	No data		All weather	Asphalt	8.5 to 13.4 (28 to 44)/good	Asphalt	0.6 (2)/good	
Golden Arrow Road	056663	082640	3 (1.9)	No data		All weather	Asphalt	6.7 (22)/good	Grass	0.6 to 0.9 (2 to 3)/good	Two lanes.
Golden Lion Road	258633	272688	6.1 (3.8)	No data		All weather	Asphalt	6.7 to 9.1 (22 to 30)/good	No data		Two lanes, divided near rifle range.
Gregg Street	045636	054632	1 (0.6)	No data		All weather	Asphalt	6.7 (22)/good	Asphalt and grass	0.6 to 1.5 (2 to 5)/good	
Hampton Parkway	062650	071641	1.3 (0.8)	No data		All weather	Asphalt	13.4 (44)/fair	No shoulder		Four lanes, divided.
Hartsville Guard Road	071641	120638	6.8 (4.2)	No data		All weather	Asphalt	6.7 (22)/excellent	Asphalt and grass	1.2 to 1.8 (4 to 6)/good	First 0.05 km (0.03 mi) of roadway from 071641 has paved shoulders.
Hill Street	048642	061627	2 (1.2)	No data		All weather	Asphalt	7.3 to 11.6 (24 to 38)/fair	No shoulder		No data for bridge at 060628.
Imboden Street	049644	075629	3 (1.9)	No data		All weather	Asphalt	6.7 to 73 (22 to 24)/good	Asphalt	1.5 (5)/good	
Infiltration Road	190732	195714	2 (1.2)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Ivy Road											
Segment a	072600	081619	2.1 (1.3)	No data		All weather	Asphalt	6.7 (22)/excellent	Grass	1.8 (6)/good	Two lanes.
Segment b	072601	082619	2 (1.2)	No data		All weather	Asphalt	6.7 (22)/good	Grass	1.8 (6)/good	
Jackson Boulevard											
Segment a	056659	042616	5 (3.1)	No data		All weather	Asphalt	7.3 to 13.1 (24 to 43)/good	Asphalt	0.8 (2.6)/good	Includes traffic circle; four lanes, divided.
Segment b	042616	040614	0.2 (0.1)	No data		All weather	Asphalt	37.3 (60)/good	Grass	1.5 (5)/good	
Johnson Rifle Road											
Segment a	201687	153679	5.1 (3.2)	No data		All weather	Asphalt	6.7 (22)/good	No data		Two lanes.
Segment b	166676	129652	4.4 (2.8)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Kemper Street	052647	067645	1.4 (0.9)	No data		All weather	Asphalt	6.7 (22)/good	Asphalt and grass	0.6 to 0.9 (2 to 3)/good	
Lee Road	053614	071641	3.5 (2.2)	No data		All weather	Asphalt	6.7 to 13.4 (22 to 44)/good	Asphalt and grass	0.9 to 1.8 (3 to 6)/good	
Liquor Still Road	214679	213665	1.6 (1)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		
Lockhart Pond Road	187674	196662	1.7 (1.1)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Longstreet Road											
Segment a	056657	035617	4.6 (2.9)	No data		All weather	Asphalt	6.7 (22)/good	Asphalt and grass	1.5 to 1.8 (5 to 6)/good	
Segment b	035617	037617	0.2 (0.1)	No data		All weather	Bituminous	6.7 (22)/good	Grass	0.6 to 1.2 (2 to 4)/good	
Segment c	037617	042616	0.4 (0.2)	No data		All weather	Asphalt	6.7 (22)/good	Grass	0.6 to 1.2 (2 to 4)/good	
Louisiana Rifle Range Road	094675	094676	0.1 (0.06)	No data		All weather	Asphalt	4.9 (16)/fair	No shoulder		
Lovers Lane	192649	203643	1.2 (0.8)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		



J. LINES OF COMMUNICATION (Continued)

1. ROADS (Continued)

ROUTE NAME	ROUTE LOCATION (GRID REFERENCE) FROM TO		LENGTH OF SEGMENT km (mi)	MILITARY LOAD CLASSIFICATION W T*		ROUTE TYPE	SURFACE		SHOULDER		REMARKS
							CONSTRUCTION MATERIALS	WIDTH/CONDITION m (ft)	CONSTRUCTION MATERIALS	WIDTH/CONDITION m (ft)	
Marion Avenue	042617	067645	4 (2.5)	No data		All weather	Asphalt	6.7 to 12.5 (22 to 41)/good	Asphalt and grass	1.5 (5)/good	
Maryland Rifle Range Road	107678	107678	0.1 (0.06)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Messers Pond Road	227712	198699	3.2 (2)	No data		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		Ditched.
Mississippi Rifle Range Road											
Segment a	089673	090672	0.1 (0.06)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Segment b	090674	091673	0.1 (0.06)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Mortar Road	121638	154629	3.6 (22)	No data		All weather	Asphalt	6.1 (20)/fair	Gravel and sand	0.9 to 1.5 (3 to 5)/poor	
Moseby Road	052647	054641	0.7 (0.4)	No data		All weather	Asphalt	7.3 (24)/good	Grass	0.6 to 1.5 (2 to 5)/good	Shoulder on northeast side only.
New York Rifle Range Road	100677	100678	0.2 (0.1)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
North Boundary Road	168735	273687	12.6 (7.8)	No data		All weather	Asphalt	6.7 (22)/excellent	No data		
North Carolina Rifle Range Road	079664	080662	0.2 (0.1)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
North Tower Road											
Segment a	197713	173718	2.5 (1.6)	No data		Fair weather	Improved dirt (clayed)	4.6 (15)/good	No shoulder		Loose sand in places.
Segment b	173718	141713	3.4 (2.1)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		
Old Hartsville Guard Road	106629	102604	2.4 (1.5)	No data		Fair weather	Unimproved dirt	4.6 (15)/good	No shoulder		
Old Hickory Road	074666	107678	4.1 (2.5)	No data		All weather	Asphalt	6.1 (20)/good	Grass and sand	0.9 to 1.8 (3 to 6)/fair	
Omaha Beach Road	170679	174672	1 (0.7)	No data		All weather	Asphalt	4.6 (15)/no data	No data		
Park Road											
Segment a	100678	098683	0.6 (0.4)	30 30		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		Ditched; loose sand in places.
Segment b	098683	088690	1.2 (0.7)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Pennsylvania Rifle Range Road	081665	081664	0.2 (0.1)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Pickens Avenue	063646	062638	0.8 (0.5)	No data		All weather	Asphalt	6.7 (22)/good	Asphalt	0.6 to 1.5 (2 to 5)/good	
Pilgrim Church Road	233659	272669	1.8 (1.1)	No data		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		
Puerto Rico Rifle Range Road	087671	088670	0.1 (0.06)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Quartermaster Road	209650	218664	1.6 (1)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Red Diamond Road											
Segment a	083640	120649	3.8 (2.4)	No data		All weather	Bituminous	7.6 (25)/good	Bituminous	1.5 (5)/fair to poor	Shoulder cracked.
Segment b	120649	220665	10 (6.2)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Segment c	220665	258692	4.8 (3)	18 17		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		Ditched; portion of road serves as tank trail.
Rifle Squad Tactical Lee Road	203705	210716	1.2 (0.7)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		
Rifle Squad Tactical Range No. 1 Road	167675	167676	0.1 (0.06)	No data		All weather	Asphalt	4.6 (15)/no data	No data		
Rifle Squad Tactical Range No. 3 Road	185683	185684	0.2 (0.1)	No data		All weather	Asphalt	4.6 (15)/no data	No data		
Rifle Squad Tactical Range No. 4 Road	194686	194687	0.2 (0.1)	No data		All weather	Asphalt	4.6 (15)/no data	No data		
Salem Road	169685	175735	5.2 (3.3)	15 15		Fair weather	Improved dirt (clayed)	4.6 (15)/fair	No shoulder		Military load classi- fication is: W-15 T-15 at Dupre Pond (175722); W-32 T-36 at Cobbs Pond (165703); loose sand in places.
Salem Cutoff Road											
Segment a	152679	164691	2 (1.2)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Scales Avenue											
Segment a	062638	061634	0.5 (0.3)	No data		All weather	Bituminous	6.7 (22)/good	Asphalt	0.9 to 1.5 (3 to 5)/good	
Segment b	061634	057630	0.5 (0.3)	No data		All weather	Asphalt	7.3 (24)/good	No shoulder		
Semmes Road	051626	102604	5.7 (3.5)	No data		All weather	Asphalt	6.7 (22)/excellent	Grass	0.9 to 1.8 (3 to 6)/excellent	
Sergeant Jasper Road	081612	089614	1.4 (0.9)	No data		All weather	Asphalt	6.1 (20)/excellent	Grass	1.2 (4)/good	
Sixth Division Road	119679	109708	3.7 (2.3)	No data		All weather	Asphalt	6.7 (22)/good	Sand and grass	0.9 to 1.8 (3 to 6)/poor	Soft shoulder.
Skyline Drive	209637	237632	3.3 (2)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		
Spears Creek Church Road	157716	160732	1.5 (0.9)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		
Statue of Liberty Road	229698	269643	7 (4.3)	No data		Fair weather	Improved dirt (clayed)	4.6 (15)/poor	No shoulder		Ditched; portion of road serves as tank trail.
Sumter Avenue	052645	040616	3.1 (1.9)	No data		All weather	Asphalt	6.7 to 9.5 (22 to 31)/good	No shoulder		
Tennessee Rifle Range Road	103677	103678	0.05 (0.03)	No data		All weather	Asphalt	4.9 (16)/good	No shoulder		
Washington Light Infantry Road											
Segment a	140614	144635	2.2 (1.4)	No data		Fair weather	Improved dirt (clayed)	6.1 (20)/good	No shoulder		
Segment b	144635	145660	2.6 (1.6)	No data		Fair weather	Unimproved dirt	4.6 (15)/fair	No shoulder		
Washington Road	047617	074604	3 (1.9)	No data		All weather	Asphalt	7.3 (24)/good	Asphalt and grass	0.9 to 1.5 (3 to 5)/good	
Weston Pond Road	145615	153624	1.6 (1)	No data		All weather	Asphalt	6.1 (20)/good	Grass	0.9 (3)/good	
Wet Road	199718	206700	2 (1.2)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		
Wildcat Road (Route 37)	122611	136720	11.5 (7.1)	No data		All weather	Asphalt	7.6 (25)/excellent	Grass	1.8 (6)/excellent	Large portion of road also serves as tank trail. Un- registered vehicles pro- hibited east of road.
Winston Road	165695	202687	4 (2.5)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		Portion of road serves as tank trail.
Woods Road	177690	186733	4.4 (2.7)	No data		Fair weather	Unimproved dirt	3 (10)/fair	No shoulder		Portion of road serves as tank trail.



J. LINES OF COMMUNICATION (Continued)

1. ROADS (Continued)

ROUTE NAME	ROUTE LOCATION (GRID REFERENCE) FROM TO		LENGTH OF SEGMENT km (mi)	MILITARY LOAD CLASSIFICATION W T*		ROUTE TYPE	SURFACE		SHOULDER		REMARKS
							CONSTRUCTION MATERIALS	WIDTH/CONDITION m (ft)	CONSTRUCTION MATERIALS	WIDTH/CONDITION m (ft)	
Yankee Division Road	236627	208699	8.2 (5.1)	28	28	Fair weather	Improved dirt (clayed)	7.6 (25)/good	No shoulder		Ditched; portion of road serves as tank trail.
Designated Tank Trails			49.5 (30.8)								
Unnamed Paved Roads			6.4 (3.9)								
Unnamed Improved Dirt Roads (clayed)			13.2 (8.2)								
Unnamed Unimproved Dirt Roads			141 (87.6)								

ROAD BRIDGES

BRIDGE NUMBER	ROUTE DESIGNATION	GRID REFERENCE	FEATURE CROSSED	MILITARY LOAD CLASSIFICATION W T*		DIMENSIONS	CLEARANCE*	TYPE/ CONSTRUCTION MATERIALS	CONDITION	REMARKS
1/D6631 <sup>‡</sup>	Boyden Arbor Road	067664	Gills Creek	29	30 (Posted 30)	27.7 m (91 ft) long 11 m (36 ft) wide Roadway width 6.7 m (22 ft)	Unlimited vertical 7 m (23 ft) horizontal	Timber piling/8.9 cm (3.5 in) base, 8.2 cm (3.2 in) wood deck, 3.8 cm (1.5 in) asphalt surface	Good	Asphalt cracked; guardrail, southeast corner, needs repair; curb, southwest corner, needs replacement.
2/G8911	Park Road	099681	Bynum Creek	30	30	5 m (16.5 ft) long 7.4 m (24.2 ft) wide Roadway width 6.8 m (22.2 ft)	Unlimited vertical 6.8 m (22.9 ft) horizontal	Timber piling/sand fill, 9.2 cm (3.6 in) wood deck	Good	
3/N0531	Salem Road	165703	Cobbs Pond Outlet	32	36 (Posted 36)	10.6 m (34.8 ft) long 9.8 m (32 ft) wide Roadway width 6.7 m (22 ft)	Unlimited vertical 7.2 m (23.5 ft) horizontal	Timber piling/concrete abut- ments, timber substructure be- low deck, 8.9 m (3.5 in) wood deck	Good	Riprap on east side needed; slight erosion at abutments; minor main- tenance needed.
4/O1252	Salem Road	175722	Dupre Pond Bridge	15	15 (Posted 18)	14.3 m (47 ft) long 10 m (33 ft) wide Roadway width 4.6 m (15 ft)	Unlimited vertical 5.2 m (17 ft) horizontal	Three span timber piling/wood deck	Good	Constructed 1941.
5	Dixie Road	198698	Colonels Creek	14.5	14.5	13.5 m (44.2 ft) long 7.3 m (24 ft) wide Roadway width 5.8 m (19 ft)	Unlimited vertical 4.6 m (15 ft) horizontal	Concrete slab/steel I-beams, eight stringers, 15.2 cm (6 in) concrete deck	Fair	Cracked wingwalls; erosion on north- east corner.
6/R9911	Century Division Road	209691	Colonels Creek	18	18 (Posted 18)	9.1 m (29.9 ft) long 9.2 m (30.2 ft) wide Roadway width 10.4 m (34.2 ft)	Unlimited vertical 9.2 m (30.2 ft) horizontal	Timber piling/8.2 cm (3.2 in) wood deck	Fair	Timber at abutments needs replace- ment; minor maintenance needed.
7/S6941	Red Diamond Road	220665	Colonels Creek	6	9 (Posted 10)	5.5 m (18.1 ft) long 7.3 m (24 ft) wide Roadway width 3.4 m (11.2 ft)	Unlimited vertical 4.3 m (14.2 ft) horizontal	Single span/concrete wingwall, steel I-beam substructure, 5.1 cm (2 in) wood deck	Good	
8/U4471 gr	Yankee Division Road	234648	Colonels Creek	26	28 (Posted 28)	14.2 m (46.5 ft) long 12.2 m (40 ft) wide Roadway width 6.7 m (22 ft)	Unlimited vertical 7.3 m (24 ft) horizontal	Three span timber piling/wood deck	Fair	Rotten decking.
9/V3351	Hill Street	060628	Wildcat Creek	No data		7.3 m (24 ft) long 20.4 m (67 ft) wide Roadway width 14.3 m (47 ft)	Unlimited vertical 17.4 m (57 ft) horizontal	Concrete box culvert <sup>§</sup> /concrete with asphalt surface, iron guard- rail	Good	
10	Tank Trail	245632	Colonels Creek	75	83 (Posted T-76)	13.4 m (44 ft) long 7.9 m (26 ft) wide Roadway width 4.9 m (16 ft)	Unlimited vertical 4.9 m (16 ft) horizontal	Timber trestle/20.3 cm (8 in) timber substructure, 10.2 cm (4 in) treadway on surface	Fair	Guardrails need repair; top of deck needs to be cleared of underbrush and debris.
11	Main exchange parking lot	062628	Wildcat Creek	No data		No data	No data	Two 1.8 x 2.4 m (6 x 8 ft) concrete box culverts	Good	Erosion around culvert outlet.

\*W = Wheeled; T = Tracked.  
\*Horizontal clearance approximate.  
\*On-post code.  
\*Concrete box culverts spanning greater than 6.1 m (20 ft) are considered to be bridges.

2. RAILROADS

Fort Jackson rail line is all freight and storage yard track. The 12.2 kilometers (7.6 miles) of usable track is in good condition; however, numerous track segments have been abandoned and their switches spiked.

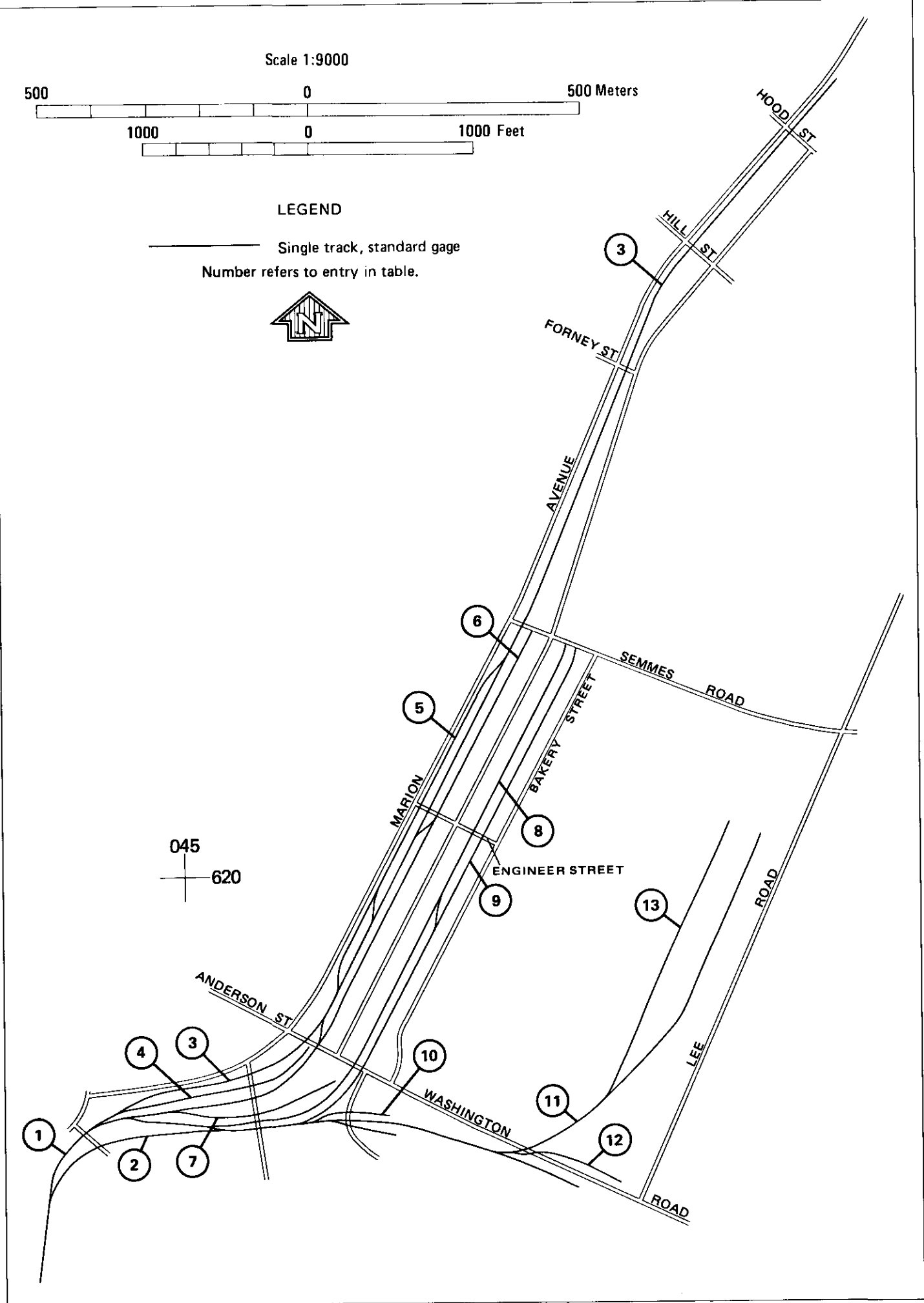
IDENTIFICATION	SEGMENT OF TRACK (GRID REFERENCE) FROM TO		LENGTH OF SEGMENT m (ft)	OWNERSHIP OF LINE AND CONDITION OF TRACK	TRACK AND BED CHARACTERISTICS	CROSSOVERS (GRID REFERENCE)	SIDINGS	VOLUME OF TRAFFIC	REMARKS
Rail yard; (refer to in dividual tracks by number on the figure below).	Track 1: 042613	052614	1280.2 (4200)	U.S. Government owned and maintained freight yard and storage yard. Reworked in 1976; good condition (unless otherwise noted).	Single track, standard gage (1.44 m or 4 ft 8.5 in); maxi- mum grade: 1.62 percent; minimum radius of curvature: 167.6 m (550 ft); ballast material: crushed granite; weight of rails 34.7 to 42.2 kg/m (70 to 85 lb/yd ), 85 percent of all rails are in this classification.	At: 043615, length: 13.1 m (43 ft), replaced ties March 1976; 046615, length: 11.9 m (39 ft); 048615, length: 6.1 m (20 ft); 050615, length: 6.1 m (20 ft), replaced ties May 1976.	All track segments are sidings.	1974: 224 inbound cars; total weight: 5,935,140 kg (13,084,524 lb); 157 outbound cars; total weight: 6,171,024 kg (13,604,552 lb).	No main lines on the reservation. Served by Seaboard Coast Line. Track 3: last 115.8 m (380 ft), of track, from 058637, taken out November 1975 and not shown on accompanying figure. Track 6: last 195.1 m (640 ft) of track, from 052625, taken out and not shown on accom- panying figure.
	Track 2: 042615	053614	371.9 (1220)	Condemned; removed switch June 1976.					
	Track 3: 048615	058637	2712.7 (8900)			At: 046616, length: 6.1 m (20 ft); 047617, length: 12.2 m (40 ft); 050622, length: 12.2 m (40 ft); 052625, length: 12.2 m (40 ft), replaced ties September 1975; 053628, length: 7.6 m (25 ft); 054631, length: 22.9 m (75 ft); 055633, length: 6.1 m (20 ft), replaced ties March 1976; 057635, length: 7.3 m (24 ft), reworked ties October 1974.			Track 7: Old coal yard trestle; condemned, now used for trans- porting fertilizer; decking rotten. 45.7 m (150 ft) of trestle re- paired in April 1976. Track 8: last 262.1 m (860 ft) of track, from 042625, taken out and not shown on accom- panying figure. Track 9: last 225.6 m (740 ft) of track, from 053627, taken out and not shown on accom- panying figure; an additional 524.2 m (1720 ft) taken out and not shown.
	Track 4: 048615	047617	396.2 (1300)	Condemned.		At: 046616, length: 6.1 m (20 ft).			
	Track 5: 048619	051625	823 (2700)	Condemned.		At: 052625, length: 11.6 m (38 ft).			Crossovers: flagman goes ahead of train when it comes on post. Train speed on post: 3.1 kmph (5 mph).
	Track 6: 048615	052625	1505.7 (4940)			At: 046616, length: 6.1 m (20 ft), replaced ties April 1978; 047617, length: 12.2 m (40 ft), replaced ties, February 1976; 050622, length: 12.2 m (40 ft), replaced ties February 1976.			
	Track 7: 045616	047616	350.5 (1150)	Poor condition; last 134.1 m (440 ft) of track, from 047616, condemned.					
	Track 8: 045615	053627	1536.2 (5040)	Condemned; spiked down switches 10 July 1978.		At: 048617, length: 12.2 m (40 ft); 051622, length: 12.2 m (40 ft).			
	Track 9: 047616	053627	1365.5 (4480)			At: 048617, length: 12.2 m (40 ft); 051622, length: 12.2 m (40 ft).			



J. LINES OF COMMUNICATION (Continued)

2. RAILROADS (Continued)

IDENTIFICATION	SEGMENT OF TRACK (GRID REFERENCE) FROM TO		LENGTH OF SEGMENT m (ft)	OWNERSHIP OF LINE AND CONDITION OF TRACK	TRACK AND BED CHARACTERISTICS	CROSSOVERS (GRID REFERENCE)	SIDINGS	VOLUME OF TRAFFIC	REMARKS
	Track 10:	047616	048616	170.7 (560)	Condemned.	At: 048615, length: 6.1 m (20 ft).			
	Track 11:	051615	055618	887 (2910)		At: 051615, length: 9.1 m (30 ft), replaced ties December 1974.			
	Track 12:	051615	054614	225.6 (740)		At: 051615, length: 12.2 m (40 ft), replaced ties December 1974.			
	Track 13:	053617	054618	585.2 (1920)					



3. PIPELINES

There is one pipeline right-of-way on Fort Jackson, a sewer pipeline owned by the East Richland County Public Service District. The pipeline runs northeast-southwest along the north side of Gills Creek. A South Carolina Electric and Gas electric line to the sewage pumping station shares the southwest end of the right-of-way.

MAP NUMBER	GRID REFERENCE FROM TO		STATUS	OWNERSHIP	PIPELINE CHARACTERISTICS	TANK CROSSING SITES	REMARKS
1	091694	108708	Operative.	East Richland County Public Service District.	25.4 cm (10 in) diameter pipe; length, 4413.8 m (14,484 ft); sewer line; design capacity not available, usage is approximately 5 percent of capacity; depth under- ground, 1 to 3 m (3 to 10 ft); pumping station at grid reference 095690.	None.	South Carolina Electric and Gas owns 120/208 V, 3 phase under- ground cable into the pump station, 233.2 m (765 ft) long; it shares the sewer line right-of-way. Sewer line easement is 4.6 m (15 ft) wide; electric line easement is 6.1 m (20 ft) wide. Sewer line began operation August 1978.

4. HELICOPTER LANDING ZONES

There are four helicopter landing zones at Fort Jackson, three in the cantonment area and one nonoperational helipad in the northeastern portion of the reservation. All three helipads within the cantonment area are in good condition. The hospital helipad is not on the hospital grounds, but at nearby Semmes Lake. The helipad near headquarters is normally used for incoming visitors; it has a painted walkway and a "Welcome to Fort Jackson" sign. The U.S. Army Reserve headquarters helipad is not used often due to complaints about low-flying aircraft from a nearby housing development.

The nonoperational helipad was constructed in 1966 to train troops for Vietnam. It is the largest helipad on Fort Jackson; though there are some cracks in the asphalt, it is still usable.

MAP NUMBER AND/OR NAME	LOCATION (GRID REFERENCE)	DIMENSIONS m (ft)	AZIMUTH	ELEVATION m (ft)	SURFACE MATERIAL	RESTRAINTS	REMARKS
1. Semmes Lake (Hospital)	055629	29 x 26 (95 x 85) (Approximate)	000°-270°	69 (227)	Asphalt with insignia.	Warehouses approximately 61 m (200 ft) west; gas station west; 9.1 m (30 ft) trees at edge of parking area.	5.2 percent slope towards Semmes Lake. Approach: 000° and 270°; departure 090° and 180°.
2. Division Headquarters	049632	14 x 14 (45 x 45)	075°-255°	76 (250)	Asphalt with insignia.	Three tall trees 46 m (150 ft) southwest.	5.2 percent slope away from head- quarters. Marked walkway for generals and a welcome to Fort Jackson sign.
3. U.S. Army Reserve Center	070639	12 x 12 (40 x 40)	045°-225°	112 (367)	Concrete with markings.	Gully northeast and east.	Windsock. Complaints from family housing exclude air traffic to east.
4	196713	31 x 31 (102 x 102)	No data	91 (300)	Asphalt with markings.	Nonoperational.	Put in circa 1966 for Vietnam train- ing; fair condition.



# FORT JACKSON, SOUTH CAROLINA TERRAIN ANALYSIS

## LINE OF COMMUNICATION

### ROADS

- Hard surface divided, 4 or more lanes
  - Hard surface, 2 or 3 lanes
  - Improved dirt (clayed)
  - Unimproved dirt
  - Tank trail
- Grade (percentage, direction, and length. Given only if  $\geq 7\%$ )
- 150 m  
10%

### Bridge data (measurements in meters)

- A Bridge number
- B One-way military load classification
- C Two-way military load classification
- D Roadway width
- E Length
- F Overhead clearance
- ∞ Unlimited vertical clearance
- W Wheeled
- T Tracked
- ? No data

### RAILROADS

- Single track, standard gage
- Multiple track, standard gage

(See figure following Table 2, Railroads.)

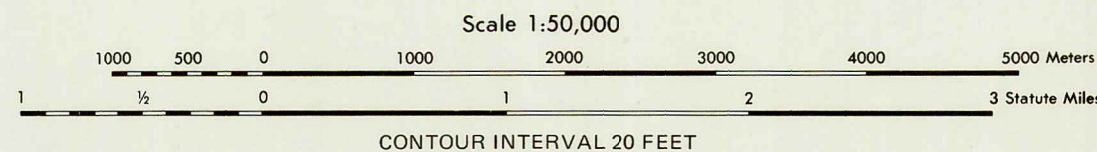
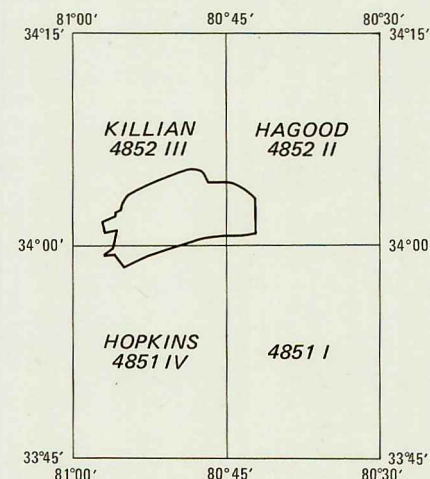
### PIPELINES

- 1 Pipeline (underground)
- P Pumping Station

### HELICOPTER LANDING ZONES

- H 4 Landing Zone

1:50,000 SHEET INDEX  
Series V746



Prepared by Dames & Moore, Washington, DC, under the direction  
of the Terrain Analysis Center, U.S. Army Engineer Topographic  
Laboratories, Fort Belvoir, Virginia. April 1979.



K. URBAN AREA (CANTONMENT AREA)

TROOP BILLETS						
TYPE	NUMBER OF BUILDINGS	CAPACITY		YEAR OF CONSTRUCTION	CONDITION	REMARKS
		TRAINEE (6.7 m <sup>2</sup> or 72 ft <sup>2</sup> )	PERMANENT PARTY (8.4 m <sup>2</sup> or 90 ft <sup>2</sup> )			
Permanent	6	1788 MN*		1966	Good to excellent	Load as of 31 October 1978 included 3156 spaces occupied in temporary buildings and 8524 in permanent structures for a total of 11,680 or 53 percent of capacity. Between 140 and 150 of the temporary buildings are in use past their life expectancy. The Post can no longer identify a use for them and they may be slated for demolition. The only approved construction through FY 1980 is a 1170 MN (1120 trainee and 50 permanent party) barracks due for completion in the first half of FY 1979. It will contain 30,580 m <sup>2</sup> (329,164 ft <sup>2</sup> ), or the equivalent of space in 57 of the present temporary structures.
	3		615 MN	1966	Good to excellent	
	9	2682		1967	Good to excellent	
	1		205	1967	Good to excellent	
	9	2682		1968	Good to excellent	
	3		580	1968	Good to excellent	
	1	80	20	1970	Good to excellent	
	5	1994	70	1971	Good to excellent	
	2		200	1972	Good to excellent	
	3	3360	210	1975	Good to excellent	
Permanent total	42	12,586	1900			
Temporary	10		352	1941	Poor	
	16	768		1941	Poor	
	15	690		1957	Poor	
	113	5266		1958	Poor	
	14		405	1958	Poor	
Temporary total	168	6724	757			
Totals	210	19,310	2657			
All Spaces: 21,967						

\*MN = persons.

QUARTERS						
TYPE	NUMBER OF BUILDINGS	CAPACITY	CURRENT LOAD	YEAR OF CONSTRUCTION	CONDITION	REMARKS
Distinguished Visitor Quarters	5 cottages	22 MN	59.2%	1941	Poor	
Bachelor Officer Quarters (Senior)	1	44 rooms	97.8%	1941	Good	An additional BOQ will be in use as of FY 1979 March (building number 2464).
Bachelor Officer Quarters	2 buildings:					
	1	159 rooms	94.1%	1972	Excellent	Kennedy BOQ has 35 spaces designated transient.
	1	19 rooms	47%	1952	Poor	Closed in winter months; used for reserves and for family housing - transients.
Bachelor Enlisted Quarters	2 buildings:					
	1	150 MN	20%	1967	Good	No additions, renovations, or other changes are slated through FY 1980. Current load percent figures give the average occupancy for 3rd quarter, FY 1978.
	1	150 MN	80%	1968	Good	
Guest House			87%			
	3 buildings:	43 rooms				
	1			1941	Poor	
	2			1952	Poor	
	9 cottages:					
	6	18 MN		1941	Poor	
	3	6 MN		1956	Poor	

FAMILY HOUSING						
TYPE	NUMBER OF BUILDINGS	NUMBER OF FAMILY UNITS	CURRENT LOAD	YEAR OF CONSTRUCTION	CONDITION	REMARKS
General	1	1		1966	Excellent	By Semmes Lake.
	1	1		1967	Excellent	
Colonel	7	7		1967	Excellent	One by Semmes Lake, remainder in Howie Village; all single-family dwellings.
	2	2		1968	Excellent	
Lt. Col/Major	10	20		1967	Excellent	Howie Village; duplex, fourplex, and some eight-family buildings.
	6	12		1968	Excellent	
CGO/WO	8	40		1967	Excellent	
	5	16		1968	Excellent	
	9	60		1972	Excellent	
NCO	41	180		1966	Excellent	Pierce Terrace; duplex, four-, six-, and eight-unit buildings.
	40	150		1968	Excellent	
	50	180		1970	Excellent	
	38	180		1972	Excellent	
	132	300		1974	Excellent	
Totals	350	1149	rate of occupancy 99% FY 1978			All family housing units are considered adequate for needs through FY 1980. Total population for family housing, calculated at one military sponsor plus 2.5 dependents per unit x 99 percent occupancy rate, yields an average population of 3981 in family housing for FY 1978. Occupancy rate is due to those units unoccupied during transition between families.

SCHOOLS AND MEDICAL FACILITIES				
TYPE		CAPACITY	CURRENT LOAD	REMARKS
Schools				
Day Care, Preschool		200	115 to 135	Cricket Corner, in two former mobilization-type hospital buildings (numbers 5420 and 5430), accommodates children from infancy through kindergarten on a drop-in, daily, or regular basis. The kindergarten program follows guidelines from Richland County School District No. 1. Part-time after school care is also provided for some children through age 13.
Elementary				
Pierce Terrace		530	490	Pierce Terrace and Hood Street schools are HEW built and owned. The two facilities are adequate, but Hood Street (building number 5615), a 16-year-old structure, is awaiting HEW's approval for a requested renovation. Special educational services are available on a contract basis from Richland County School District No. 1.
Hood Street		340	277	
Gregg Circle		250	232	Two substandard, World War II, frame, Army-owned buildings (numbers 1 and 53) serve as the Gregg Circle school. Replacement has been pending for five years on a request to HEW.
Present enrollment provides for a 23-24 to 1 pupil-teacher ratio. After completion of work in this K through 6 system, children are bussed off-post for grades 7 through 12.				



K. URBAN AREA (CANTONMENT AREA)  
(Continued)

SCHOOLS AND MEDICAL FACILITIES (Continued)

TYPE	CAPACITY	CURRENT LOAD	REMARKS
Medical Facilities Hospital	410 beds authorized (design capacity 435 beds)	204 (average daily census to March 1978)  150 to 155 3rd quarter 1978	Moncrief Army Hospital, building number 4500, completed in 1972, has an emergency capacity of 1000 beds, pending additional necessary staffing and reallocation of space. This would include the use of the old cantonment hospital (block 5400) for the additional 400 to 500 beds. Presently the hospital offers a full range of general medical services as well as a broad range of specializations. Staffing includes 655 members, 85 percent of authorized strength, and provides a ratio of 3 to 1. No plans exist for expansion of capacity for the hospital. An annex planned for 1984-85 will consolidate Health and Environmental MEDDAC service facilities. A helipad serving the hospital is between building number 4502 and Semmes Lake.
Troop Clinics (Dispensaries)	5 units	5 units	No change in capacity is planned following the October 1978 consolidation of outlying troop clinics to the old cantonment hospital area. It is expected that this move will make more efficient use of personnel.
Dental Clinics	3 units, 28 chairs each		Dental clinics include Oliver (building number 4323), Hagen (building number 5330),and Caldwell (building number 4590). No changes are planned through FY 1980 for these facilities.

RECREATION FACILITIES

TYPE	CAPACITY	REMARKS
Outdoor Facilities Golf Courses (2) Golf Driving Range (1) Mini-Golf Course (1) General Purpose Playgrounds Multi-Courts (8) Basketball Courts (8) Volleyball Courts (10) Handball Courts (10) Tennis Courts (18) Baseball Field (1) Softball Fields (9)  Football Field (1) Soccer Fields (2) Running Track (1) Youth Activities Baseball Fields (3) Outdoor Swimming Pools (2)	500 seats (permanent bleachers)          1500 seats (permanent bleachers)*	One 18-hole regulation course, pro shop, clubhouse; one 9-hole, par 3 course.  18-hole, constructed in 1974. Spotted throughout family housing area. Include basketball, volleyball, tennis: fair condition. Five included on Multi-Courts; three within company areas are clay courts. Five included on Multi-Courts; five within company areas are grass courts. Six without ceilings; two under construction (eight are in gymnasiums); two are planned for FY 1979. 10 included on Multi-Courts; all require resurfacing. Cole Baseball Park: reduced to softball field. One new field; seven fields require upgrading and fences extended for Slow Pitch; one superimposed by Flag Football Field; additional lighted field planned for FY 1979. Combined football and track field: good condition. One each superimposed on Hilton Field Parade Grounds and Darvy Parade Field. Cinder track around Patton Field: fair condition. Little League fields: good condition, lighted; one Colt field is planned for family housing area during FY 1979. One each at NCO and Officers' Clubs; one 42.4 x 15.8 m (139 x 52 ft), one 50.3 x 15.8 m (165 x 52 ft).
Indoor Facilities Fieldhouse (1) Gymnasiums (4)  Recreation Centers (3)  Youth Center (1) Theaters (3)  Bowling Centers (2) Libraries (2)	1000 seats <sup>‡</sup> one 500 seats <sup>†</sup> three, each 1080 seats <sup>‡</sup> one 175 seats one 400 seats one 350 seats 726 m <sup>2</sup> (7810 ft <sup>2</sup> ) one 901.6 m <sup>2</sup> (9705 ft <sup>2</sup> ) one 1578.6 m <sup>2</sup> (16,992 ft <sup>2</sup> ) 48 lanes Main: 96.2 m <sup>2</sup> (1036 ft <sup>2</sup> ) Branch: 1337.8 m <sup>2</sup> (14,400 ft <sup>2</sup> )	Lee Fieldhouse. Coleman Gymnasium is new, operated by Recreation Division Services: excellent condition. Other gymnasiums are operated by Brigades; all in good condition. One World War I building, two permanent construction: seating is on folding chairs in ballroom areas; by the end of FY 1980, Recreation Center No. 1 (building number 9511) will be closed.  World War II building. One World War II building designed as a theater, now inactive.  One with 24 AMF lanes, one with 24 Brunswick lanes (buildings numbers 4464 and 2395): good condition. Libraries need additional space; strong children's collection in Main library; both buildings in excellent condition.  An indoor swimming pool, olympic size (50 x 28 m or 164 x 92 ft) with 10 racing lanes, bathhouse, and sun deck is planned as addition to existing recreation facilities by FY 1980.

\*Temporary, portable bleachers are available as needed: 32 sets with 50 seats each.  
†Permanent bleachers, wood and steel.

TELECOMMUNICATIONS

TYPE	CAPACITY AND CURRENT LOAD	REMARKS
Official Telephone	4355 instruments  4200 centrex lines 400 lines PBX (4600 total existing lines) 1900 lines in use  60 incoming trunks 40 outgoing trunks 4 operator positions 29 AUTOVON network trunks	System is operated and maintained by the U.S. Government, some Government owned, some owned by Southern Bell and Government leased. System is in good condition; all of cable has been replaced since 1952. No plans for change are envisioned through FY 1980. Main exchange. Moncrief Army Hospital satellite exchange.  System has over a 100 percent expansion capability since original lines, installed prior to 1972, turned over to Communication Command are still in place. Connect with Columbia. Connect with Columbia. At the Main Exchange. 18 trunks are two-way (in/out), 11 are one-way (in) to Post. No WATS or foreign exchange lines are in use.
Unofficial Telephone		NCO and Officers' family housing phone service is furnished by Southern Bell.

ELECTRICITY

SUBSTATION	TRANSFORMERS	CAPACITY	LOAD	REMARKS
one	two 22.4 MVA	44.8 MVA total	Peak demand August 1977: 26,028 kW	Electrical power is supplied to Fort Jackson from South Carolina Electric and Gas (SCE&G) by two 115 kV overhead lines to the substation at the intersection of Lee Road and Hill Street. From this substation power is distributed via 8.32 kV underground cable/overhead lines throughout the Post. Power to individual buildings for heating, air conditioning, lighting, and other loads is served via 8.32 kV-480/277 V or 120/208 V, three-phase, four-wire, or 4.8 kV-120/240 V one-phase, three-wire transformers.  The system is considered adequate; no changes are anticipated through FY 1980. The present transformers were installed new in 1975.

NATURAL GAS

CAPACITY	CURRENT LOAD*	REMARKS
2067.4 x 10 <sup>3</sup> to 43,896 x 10 <sup>3</sup> m <sup>3</sup> /day (73,000 x 10 <sup>3</sup> to 1,550,000 x 10 <sup>3</sup> ft <sup>3</sup> /day) with 15.24 cm (6 in) lines <sup>†</sup>	July 1977: 189.5 x 10 <sup>3</sup> m <sup>3</sup> (6692.8 x 10 <sup>3</sup> ft <sup>3</sup> ) August 1978: 177.8 x 10 <sup>3</sup> m <sup>3</sup> (6277.5 x 10 <sup>3</sup> ft <sup>3</sup> ) maximum daily draw  Supplied consumption FY 1977 total: 28,792 x 10 <sup>3</sup> m <sup>3</sup> (1,016,664 x 10 <sup>3</sup> ft <sup>3</sup> ) firm: 10,614.6 x 10 <sup>3</sup> m <sup>3</sup> (374,809 x 10 <sup>3</sup> ft <sup>3</sup> ) interrupted: 18,177.3 x 10 <sup>3</sup> m <sup>3</sup> (641,855 x 10 <sup>3</sup> ft <sup>3</sup> ) (with 2175 hours of interrupted service)	Natural gas is supplied to Fort Jackson by South Carolina Electric and Gas (SCE&G) on both a firm and an interruptible basis. Large energy plants, used in heating and cooling, operate on an interruptible supply. Included are two central boiler plants and three other large heating systems for individual buildings. These buildings have a dual-fuel capability with oil as backup. Interruption can be effected after a two hour notification from SCE&G. Facilities on a firm supply include all family housing units and dining facilities.  Natural gas is introduced onto the Post near Gate No. 1 through a SCE&G 25.4 cm (10 in) main. SCE&G owns and maintains 25.4 cm (10 in) and 20.3 cm (8 in) lines which connect to U.S. Government owned and maintained 15.2 cm (6 in) runouts. Delivery is no less than 3.74 x 10 <sup>7</sup> J/m <sup>3</sup> (1000 BTU/ft <sup>3</sup> ), at standard temperature and pressure.  Plans to FY 1980 include the addition of one new boiler and one chiller for a new 1000 MN barracks. The system is in good condition and is considered adequate for all present and projected needs.

\*Current load, calculated on single month "worst case" basis: 3344.8 x 10<sup>3</sup> m<sup>3</sup> (118,109 x 10<sup>3</sup> ft<sup>3</sup>) (July, heaviest actual month of use FY 1977) ÷ 30 days x 1.7 (peak demand factor); 3137.3 x 10<sup>3</sup> m<sup>3</sup> (110,780 x 10<sup>3</sup> ft<sup>3</sup>) (August, heaviest actual month of use FY 1978) ÷ 30 days x 1.7 (peak demand factor).  
†July 1960 contract amount.



K. URBAN AREA (CANTONMENT AREA)  
(Continued)

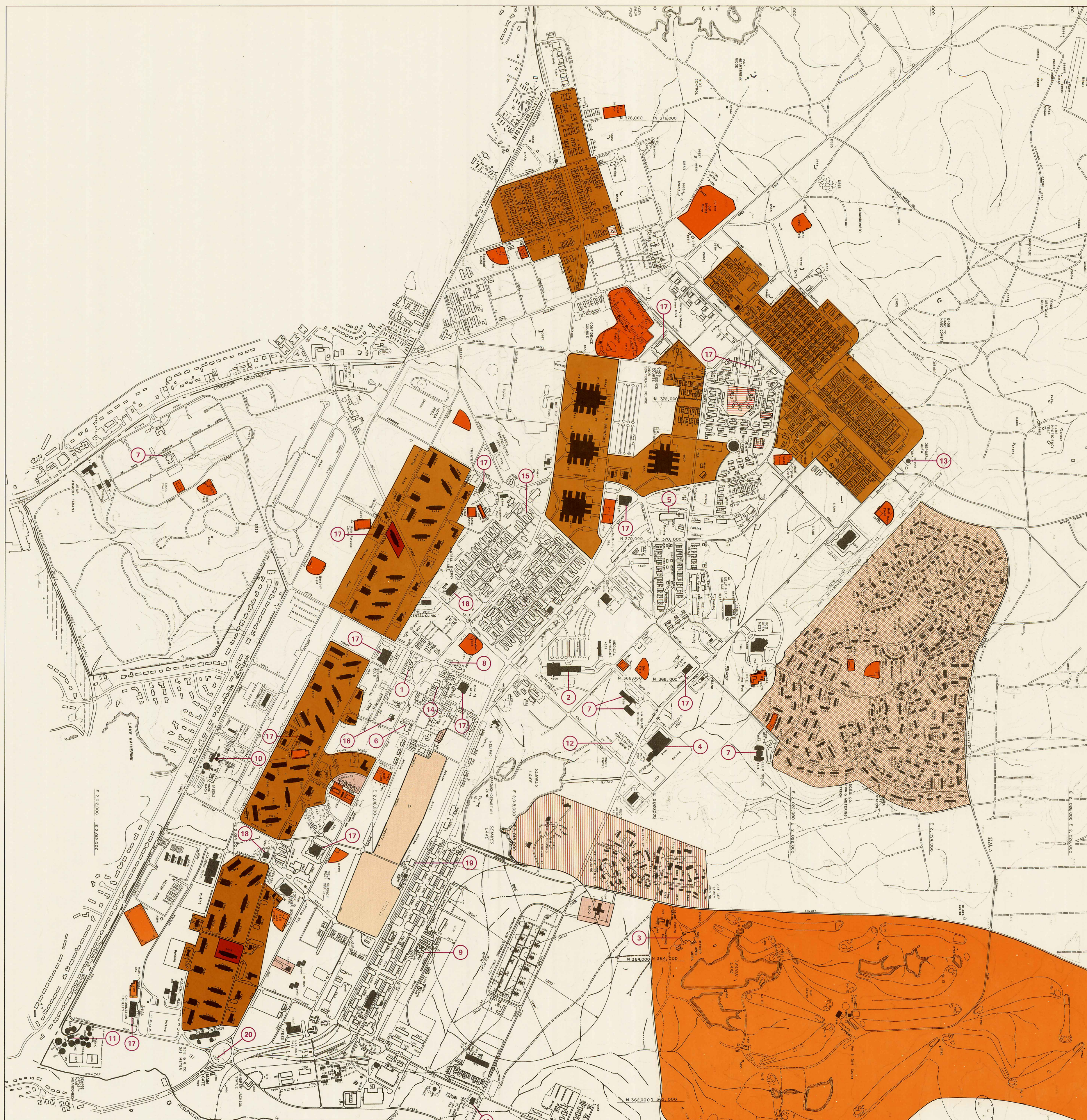
WATER SUPPLY			
TYPE	CAPACITY	CURRENT LOAD	REMARKS
Supply	554.5 x 10 <sup>6</sup> lpd (146.5 x 10 <sup>6</sup> gpd)* 450 acre-ft <sup>†</sup>	17 x 10 <sup>6</sup> lpd (4.5 x 10 <sup>6</sup> gpd) average daily consumption	Forrest Lake Reservoir supplies raw water through a 60.9 cm (24 in) gravity fed pipe, to the raw water pump house at the Post water treatment plant on Longstreet Road. The plant is slated for demolition when and if proposed southeastern freeway is constructed sometime after FY 1980.
	56.8 x 10 <sup>6</sup> lpd (15 x 10 <sup>6</sup> gpd) delivered to pumps at 4569.5 g/cm <sup>2</sup> absolute (65 psia) <sup>‡</sup>	27.2 x 10 <sup>6</sup> lpd (7.2 x 10 <sup>6</sup> gpd) peak daily consumption August 1977	Actual supply capacity is limited by the amount of water which can be passed through the treatment plant pumps in a given 24-hour period.
		17,032.5 lpm (4500 gpm) peak hourly rate <sup>§</sup>	Contract allows an automatic feed of 3.8 x 10 <sup>6</sup> lpd (1 x 10 <sup>6</sup> gpd) estimated maximum daily demand without notification to the city. With special permission additional amounts of finished water are available from this source.
Treatment	18.9 x 10 <sup>6</sup> lpd (5 x 10 <sup>6</sup> gpd) design capacity		High service pumps were replaced at the Longstreet Plant, October 1978, as part of a \$140,000 improvement project to be completed by end of FY 1979. This will improve service but will not change capacity of the plant, as replacement pumps are the same size as former ones.
	30.3 x 10 <sup>6</sup> lpd (8 x 10 <sup>6</sup> gpd) pumping capacity	(see above, average daily consumption)	
	946 x 10 <sup>3</sup> liter (250 x 10 <sup>3</sup> gal) reservoir for finished water		
Storage Standpipe	6.8 x 10 <sup>6</sup> liters (1.8 x 10 <sup>6</sup> gal)	90 percent of capacity 6.1 x 10 <sup>6</sup> liters (1.62 x 10 <sup>6</sup> gal)	Facility number 10-800, mounted on concrete, the steel standpipe gages record drop and rate of fall from the reservoir and aid in determining how demands for water will be supplied.
	4.9 x 10 <sup>6</sup> liters (1.3 x 10 <sup>6</sup> gal)	100 percent of capacity	Used primarily for fire protection needs, this reservoir is in-ground, of all concrete construction, facility number 8670.
			No changes or additions, except those previously noted, are anticipated for the water supply system through FY 1980.

\*Liters per day; gallons per day.  
† Available storage between overflow crest, elevation 50.9 m (167 ft) and top of intake pipe, plus 0.15 m (0.5 ft). If one assumed a no inflow situation with a 27.2 x 10<sup>6</sup> lpd (7.2 x 10<sup>6</sup> gpd) demand, a 20-day reserve exists.  
‡ Additional finished water is available from Columbia water supply (through a tie-in) to meet needs if demand through Post treatment plant is exceeded.  
§ During period 1900 to 2200 hours (7 to 10 p.m.).

SEWERAGE				
PLANT	CAPACITY	CURRENT LOAD		REMARKS
		AVERAGE DAILY FLOW	PEAK RECORD FLOW*	
Columbia Metropolitan Waste Water Treatment Plant	75.7 x 10 <sup>6</sup> lpd (20 x 10 <sup>6</sup> gpd) maximum daily flow-hydraulic design capacity	98.4 x 10 <sup>6</sup> to 113.6 x 10 <sup>6</sup> lpd (26 x 10 <sup>6</sup> to 30 x 10 <sup>6</sup> gpd) figure includes the city of Columbia  10.2 x 10 <sup>6</sup> lpd (2.7 x 10 <sup>6</sup> gpd) Fort Jackson - FY 1977	12,078,584 lpd (3,191,171 gpd)	A sewerage facility on Post exists, but is abandoned. Fort Jackson sewerage receives secondary treatment at the Columbia Metropolitan Waste Water Treatment Plant. This facility will expand to bring online equipment to handle up to 151.4 x 10 <sup>6</sup> lpd (40 x 10 <sup>6</sup> gpd) by FY 1980.  Contract amount is based on average 75.7 x 10 <sup>6</sup> liters (20 x 10 <sup>6</sup> gal) per week, with a surcharge levied on amounts exceeding the limit.

\*Peak flow for Fort Jackson calculated on 35-day period (from 26 July 1978 to 30 August 1978) total of 422,750,435 liters (111,691,000 gal).





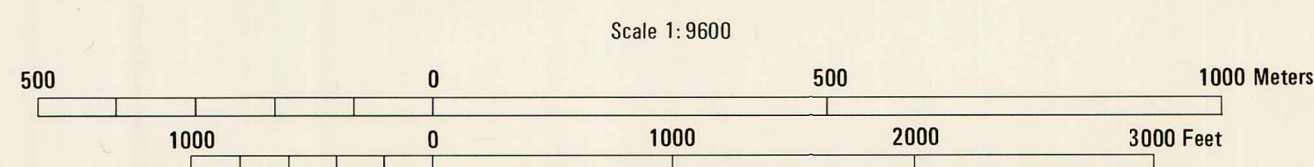
# **FORT JACKSON, SOUTH CAROLINA** **TERRAIN ANALYSIS** **URBAN AREA (CANTONMENT AREA)**

## **AREA FEATURES**

	Family Housing, Officers		Bachelor Enlisted Quarters
	Family Housing, NCO		Guest Houses
	Barracks, Troop Quarters		Parade Grounds
	Bachelor Officer Quarters		Recreation Facilities, Outdoor

## **POINT FEATURES**

	Post Headquarters		Post Chapel		Education Center
	Post Hospital		Directorate of Facilities Engineering		Telephone Exchange
	Officers' Open Mess		Central Water Filtration Facility		Recreation Facility, Indoor
	Post Exchange		Sewage Treatment Facility (Abandoned)		Central Energy Plants (Heating and Air Conditioning)
	Commissary		Electrical Power Substation		XMTR Radio Building
	Post Office		Water Storage Tank		Monument
	Dependent School		Post Museum		



Prepared by Dames & Moore, Washington, DC, under the direction of the Terrain Analysis Center, U.S. Army Engineer Topographic Laboratories, Fort Belvoir, Virginia. April 1979.



L. NON-URBAN CULTURE FEATURES

On the Fort Jackson reservation, there are over 122 manmade features outside the cantonment area which could either positively or negatively affect military training or operations. Most of these features, depicted on the accompanying map and described below, consist of various types of buildings, cemeteries, revetments, and towers, many of which are associated with the various ranges on the reservation. The manmade features included are those that existed as of September 1978.

MAP NUMBER	GRID REFERENCE	DESCRIPTION*	MAP NUMBER	GRID REFERENCE	DESCRIPTION*
1	062657	Mock village (riot control): Two wooden plank facades, one and two stories; latrine <sub>(1)</sub> ; storage shed, concrete with metal siding.	44	128651	Bastogne Combined Arms Range (Tank Tables IV, VI, and VIII): Two towers, one, height 4.6 m (15 ft), base 6.7 m <sup>2</sup> (72 ft <sup>2</sup> ), one, height 4.6 m (15 ft), base 20.1 m <sup>2</sup> (216 ft <sup>2</sup> ); range house, 49.1 m <sup>2</sup> (528 ft <sup>2</sup> ), metal siding; two latrines, one <sub>(1)</sub> , one 17.8 m <sup>2</sup> (192 ft <sup>2</sup> ), metal siding; training building, 176.4 m <sup>2</sup> (1899 ft <sup>2</sup> ), concrete block, metal siding; two storage sheds, one 2.8 m <sup>2</sup> (30 ft <sup>2</sup> ), one 5.6 m <sup>2</sup> (60 ft <sup>2</sup> ), each metal siding on concrete block; one set bleachers <sub>(5)</sub> ; all structures temporary.
2	062656	Pugil Stick Training Area, D543 (riot control): Gas chamber, 59.5 m <sup>2</sup> (640 ft <sup>2</sup> ), concrete block, temporary; range house <sub>(2)</sub> ; lightning dispersal shelter <sub>(3)</sub> ; storage shed, 49.3 m <sup>2</sup> (531 ft <sup>2</sup> ).			
3	066657	Heart Break Ridge (practice hand grenade range): Two range houses, one 17.8 m <sup>2</sup> (192 ft <sup>2</sup> ), concrete and metal, one 7.4 m <sup>2</sup> (80 ft <sup>2</sup> ); two storage sheds, each approximately 9.3 m <sup>2</sup> (100 ft <sup>2</sup> ).	45	122644	Weir Tower: Height 23 m (75 ft); lookout shed on top, 49.1 m <sup>2</sup> (529 ft <sup>2</sup> ), all wood; used for fire watch.
4	061666	Cemetery, Beulah Church: Enclosed by fence.	46	122645	Two radio antenna towers: One, height 76.3 m (250 ft), metal, on pedestal in 0.4 m <sup>2</sup> (4 ft <sup>2</sup> ) concrete base, owned and operated by Army Corps of Engineers; one, height 76.3 m (250 ft), steel, in concrete base, used by Military Police and Civil Defense Preparedness, city of Columbia.
5	063653	Chemical Demonstration (CDT) Area, D533: Two gas chambers, one 59.5 m <sup>2</sup> (640 ft <sup>2</sup> ), one 47.6 m <sup>2</sup> (512 ft <sup>2</sup> ); range house, 78 m <sup>2</sup> (840 ft <sup>2</sup> ); two latrines, one <sub>(1)</sub> , one 27.9 m <sup>2</sup> (300 ft <sup>2</sup> ).	47	118638	BRM Range 16, Georgia: Tower, height 4.6 m (15 ft), concrete block; range house, 16.7 m <sup>2</sup> (180 ft <sup>2</sup> ); two latrines <sub>(1)</sub> ; butler building <sub>(7)</sub> ; one set bleachers <sub>(5)</sub> ; ammunition shed.
6	072602	Cemetery, Vick Chapel Church: Enclosed by fence.	48	116634	Cemetery, St. Wesberry High Hill.
7	078642	Directorate of Plans and Training (DPT) Proficiency Test Area, "Super Bowl": Four range houses, two 66.9 m <sup>2</sup> (720 ft <sup>2</sup> ), two 47.6 m <sup>2</sup> (512 ft <sup>2</sup> ), each siding on concrete slab; three latrines; one shelter; four storage sheds; testing shed, 123 m <sup>2</sup> (1324 ft <sup>2</sup> ).	49	116617	Cemetery, James M. Jones, R. M. Freeman.
8	078602	Cemetery, Sweet Home Church.	50	125677	BRM Range 19: Tower, height approximately 4.6 m (15 ft), concrete block; two sets bleachers <sub>(5)</sub> ; two butler buildings <sub>(7)</sub> .
9	077626	Driver Education Course (abandoned): Range house, 39 m <sup>2</sup> (420 ft <sup>2</sup> ); latrine, 17.8 m <sup>2</sup> (192 ft <sup>2</sup> ); grease rack; mess shelter.	51	121611	Cemetery, Jones: Enclosed by fence.
10	080636	Hilton Field Parade Grounds: Latrine, 33.3 m <sup>2</sup> (358 ft <sup>2</sup> ); reviewing stand.	52	137701	BRM Range, St. Lo (abandoned): Tower; three latrines in extreme state of deterioration.
11	081653	Aachen Infiltration Course (abandoned): Tower, open bottom; range house, 47.6 m <sup>2</sup> (512 ft <sup>2</sup> ); latrine, 30.1 m <sup>2</sup> (324 ft <sup>2</sup> ); four machine gun mounts with foxholes, mounts are concrete pads on block.	53	124686	At Barstow Lake: Barstow Lodge (inactive Dispensary 6), 291.1 m <sup>2</sup> (3133 ft <sup>2</sup> ), all wood, log and plank; latrine, 39.2 m <sup>2</sup> (422 ft <sup>2</sup> ); well house <sub>(1)</sub> .
12	077660	Cemetery, John Davis.	54	134673	Pistol Range, Andrew Jackson: Latrine <sub>(1)</sub> ; equipment storage area, 52 m <sup>2</sup> (560 ft <sup>2</sup> ), concrete base, iron pipe stands, and metal roof; range house, 47.6 m <sup>2</sup> (512 ft <sup>2</sup> ).
13	088669	Basic Rifle Marksmanship (BRM) Range 6, Puerto Rico: Tower <sub>(4)</sub> ; four storage buildings, three metal and one wood; one set bleachers <sub>(5)</sub> .	55	132633	Ammunition Storage Complex: Administration building, 111.5 m <sup>2</sup> (1200 ft <sup>2</sup> ); ammunition shop (dunnage and packing), 122.2 m <sup>2</sup> (1316 ft <sup>2</sup> ); concrete box (segregated bay), 50.6 m <sup>2</sup> (545 ft <sup>2</sup> ); sentry station, 3.2 m <sup>2</sup> (35 ft <sup>2</sup> ); ammunition magazine, fixed, 792.4 m <sup>2</sup> (8530 ft <sup>2</sup> ), all reinforced concrete on slab on grade, concrete block with brick veneer, permanent; 12 igloo-magazines, each 181.2 m <sup>2</sup> (1950 ft <sup>2</sup> ), reinforced concrete on gravel fill, corrugated steel arch, and mounded earth; magazine, 55.7 m <sup>2</sup> (600 ft <sup>2</sup> ), concrete pad, temporary; ammunition salvage storage area, open, 423.9 m <sup>2</sup> (4563 ft <sup>2</sup> ), concrete 5 cm (2 in) thick over 22.5 cm (9 in) subbase; suspect truck site, 171.4 m <sup>2</sup> (1845 ft <sup>2</sup> ), paving 5 cm (2 in) on 22.5 cm (9 in) sub-base; water well, 1.5 m <sup>2</sup> (16 ft <sup>2</sup> ), surrounded by brick wall with metal cover; area surrounded by security cyclone fence topped with barbed wire, height 2.1 m (7 ft).
14	087667	BRM Range 5, Alabama: Tower; range house, 19.1 m <sup>2</sup> (206 ft <sup>2</sup> ); latrine <sub>(1)</sub> ; storage shed; two shelters <sub>(3)</sub> .	56	142622	Cemetery, Brazelle (W. D. Turner): Enclosed by fence.
15	083665	BRM Range 3, Pennsylvania: Tower <sub>(6)</sub> ; range house <sub>(2)</sub> ; latrine <sub>(1)</sub> ; one set bleachers <sub>(5)</sub> ; one butler building <sub>(7)</sub> .	57	143674	Anzio Defensive Course: Tower, open base, 15.7 m <sup>2</sup> (169 ft <sup>2</sup> ); range house; latrine <sub>(1)</sub> ; one set bleachers <sub>(5)</sub> ; butler building <sub>(7)</sub> ; equipment shed, wood.
16	080662	BRM Range 2, North Carolina: Tower <sub>(6)</sub> ; two range houses <sub>(8)</sub> ; latrine <sub>(1)</sub> ; one set bleachers <sub>(5)</sub> ; lightning dispersal shelter <sub>(3)</sub> .	58	145634	Observation Post # 1: Concrete surveyor's monument; observation bunker <sub>(12)</sub> .
17	078658	BRM Range 1, South Carolina: Tower <sub>(6)</sub> ; two range houses, one <sub>(8)</sub> , one 22.3 m <sup>2</sup> (240 ft <sup>2</sup> ); one set bleachers <sub>(5)</sub> ; lightning dispersal shelter <sub>(3)</sub> .	59	143675	Chipyong-Ni Range: Range house <sub>(13)</sub> ; two latrines <sub>(1)</sub> ; bleachers <sub>(14)</sub> .
18	084651	Cemetery, Andrew Patterson: Enclosed by fence.	60	146686	Metz Day/Night Defense Range: Tower; latrine <sub>(1)</sub> ; bleachers <sub>(14)</sub> ; mess shelter.
19	083637	Abandoned airfield: Runway, length 594.4 m (1950 ft), width 121.9 m (400 ft); taxiway, length 390 m (1280 ft), width 30.5 m (100 ft); surface sodded; azimuth 050° - 230° runway, 150° - 330° taxiway.	61	143640	Observation Post # 2: Concrete monument; observation bunker <sub>(12)</sub> .
20	084627 to 090629	Sanitary Landfill (closed): Sentry station; waiting shelter; enclosed by fence.	62	151652	Observation Post # 3: Concrete monument; observation bunker <sub>(12)</sub> .
21	085616	Twin Lakes: Two picnic shelters, each 178.4 m <sup>2</sup> (1920 ft <sup>2</sup> ); range house, 28.3 m <sup>2</sup> (305 ft <sup>2</sup> ); latrine, 32.5 m <sup>2</sup> (350 ft <sup>2</sup> ); well house, 3.5 m <sup>2</sup> (38 ft <sup>2</sup> ); chlorinator house, 6.8 m <sup>2</sup> (73 ft <sup>2</sup> ).	63	151655	Observation Post # 4: Concrete monument; observation bunker <sub>(12)</sub> .
22	089672	BRM Range 7, Mississippi: Tower <sub>(6)</sub> ; range house <sub>(9)</sub> ; latrine <sub>(1)</sub> ; target shed; one set bleachers <sub>(5)</sub> .	64	154682	Remagen Hand Grenade Range: Two throwing bays, concrete; ready line of 10.2 x 10.2 cm (4 x 4 in) railroad ties, with covered walkway and five periscopes, length 12.2 m (40 ft); tower, height 6.1 m (20 ft), with plexi-glass safety window; range house, 23.8 m <sup>2</sup> (256 ft <sup>2</sup> ), concrete and metal; storage shed, 16.7 m <sup>2</sup> (180 ft <sup>2</sup> ), all wood, temporary; latrine, 30.1 m <sup>2</sup> (324 ft <sup>2</sup> ).
23	093674	BRM Range 9, Delaware: Tower <sub>(6)</sub> ; range house <sub>(2)</sub> ; latrine <sub>(1)</sub> ; one set bleachers <sub>(5)</sub> .	65	156672	Observation Post # 7: Concrete monument; observation bunker <sub>(12)</sub> .
24	092673	BRM Range 8, West Virginia: Tower <sub>(6)</sub> ; range house <sub>(2)</sub> ; two latrines <sub>(1)</sub> ; one set bleachers <sub>(5)</sub> ; two butler buildings <sub>(7)</sub> ; two ammunition storage sheds.	66	157665	Observation Post # 5: Concrete monument; observation bunker <sub>(12)</sub> .
25	093647	Cemetery, John T. Duncan.	67	159621 to 159629	Weston Lake Recreation Area: Bath house, 34.3 m <sup>2</sup> (369 ft <sup>2</sup> ); four two-bedroom lake cottages, each 66.3 m <sup>2</sup> (714 ft <sup>2</sup> ); store house, 17.8 m <sup>2</sup> (192 ft <sup>2</sup> ); two latrines, each 33.3 m <sup>2</sup> (358 ft <sup>2</sup> ); shower-latrine, 144 m <sup>2</sup> (1550 ft <sup>2</sup> ); boat house, 144 m <sup>2</sup> (1550 ft <sup>2</sup> ); field mess, 49.1 m <sup>2</sup> (528 ft <sup>2</sup> ); community center, 522.6 m <sup>2</sup> (5625 ft <sup>2</sup> ), capacity 300 men; duplex (two-family); dorm, capacity 10 men; mobile home (female dorm), capacity eight women; travel center and laundry, 114.8 m <sup>2</sup> (1236 ft <sup>2</sup> ); eight picnic shelters, capacity 40 to 60 people, concrete pads with metal roofs; pavilion, 97.9 m <sup>2</sup> (1054 ft <sup>2</sup> ); control gatehouse; two water wells with treatment plants, each 9.9 m <sup>2</sup> (107 ft <sup>2</sup> ); sewage treatment plant, 3.3 m <sup>2</sup> (36 ft <sup>2</sup> ), with sewage lagoon, 18.6 m <sup>2</sup> (200 ft <sup>2</sup> ), enclosed by fence.
26	092639	BRM Range 18, Wildcat (inactive): Tower, height approximately 3 m (10 ft); range house, 14.3 m <sup>2</sup> (154 ft <sup>2</sup> ); two latrines, one <sub>(1)</sub> , one 7.5 m <sup>2</sup> (81 ft <sup>2</sup> ); three storage sheds, two 20.1 m <sup>2</sup> (216 ft <sup>2</sup> ), metal siding, one 11.6 m <sup>2</sup> (125 ft <sup>2</sup> ), wood, temporary.			
27	098677	BRM Range 11, New Jersey: Tower, open base <sub>(6)</sub> ; range house <sub>(2)</sub> ; latrine <sub>(1)</sub> ; two butler buildings <sub>(7)</sub> .			
28	096676	BRM Range 10, Louisiana: Tower, height 3.7 m (12 ft), base 13.5 m <sup>2</sup> (145 ft <sup>2</sup> ); range house, 19.1 m <sup>2</sup> (206 ft <sup>2</sup> ); latrine <sub>(1)</sub> ; one set bleachers <sub>(5)</sub> ; storage shed, 16.4 m <sup>2</sup> (176 ft <sup>2</sup> ).	68	169677	Observation Post # 8: Concrete monument; observation bunker <sub>(12)</sub> .
29	091621	Cemetery, Janie Hammond.	69	159669	Observation Post # 6: Concrete monument; observation bunker <sub>(12)</sub> .
30	093623	Cemetery, Andrew Patterson.	70	169627	Kasserine Pass, LAW Range (inactive): Tower, open base; range house; latrine (not used - supply portable); earth berm, height 0.9 m (3 ft), in front of narrow gage railroad track for moving target; jeep pulley mechanism (at right angles to track); track and berm, approximate length 200 m (656 ft).
31	096621	Cemetery, N. D. Porter.	71	173666	Observation Post # 9: Concrete monument; observation bunker <sub>(12)</sub> .
32	102677	BRM Range 12, New York: Tower, open base <sub>(6)</sub> ; range house <sub>(8)</sub> ; latrine <sub>(1)</sub> .	72	166675	Rifle Squad Tactical Range 1 (RST # 1): Observation tower, approximate height 7.6 m (25 ft), open base, 15.3 m <sup>2</sup> (165 ft <sup>2</sup> ), steel and metal siding with plexiglass windows; range house, 35.2 m <sup>2</sup> (379 ft <sup>2</sup> ); latrine, 30.1 m <sup>2</sup> (324 ft <sup>2</sup> ); messhall, 155 m <sup>2</sup> (1668 ft <sup>2</sup> ); three bleachers, one 260- and two 60-man capacity; range storage building; all buildings are concrete block, semipermanent; 14 concrete foxholes.
33	104677	BRM Range 13, Tennessee: Tower, open base, 13.5 m <sup>2</sup> (145 ft <sup>2</sup> ); range house <sub>(2)</sub> ; two latrines <sub>(1)</sub> ; storage shed, 26.6 m <sup>2</sup> (286 ft <sup>2</sup> ).	73	169686	Cemetery, Mt. Pleasant Baptist Church: Enclosed by fence.
34	098623	Cemetery, C. L. Blease: Enclosed by fence.	74	173673	Tactical Assault Course, Omaha Beach (RST # 2): Observation tower, approximate height 10.7 m (35 ft), open base, steel and metal siding with metal roof; range house, 35.2 m <sup>2</sup> (379 ft <sup>2</sup> ); powerplant; messhall, 150 m <sup>2</sup> (1668 ft <sup>2</sup> ), all concrete block, semipermanent.
35	111694	Cemetery, Enon Church: Enclosed by fence.	75	172662	Cemetery, Mt. Pleasant Baptist.
36	106677	BRM Range 14, Virginia: Tower, open base <sub>(6)</sub> ; range house <sub>(8)</sub> ; latrine <sub>(1)</sub> ; butler building <sub>(7)</sub> ; storage shed, 17.2 m <sup>2</sup> (185 ft <sup>2</sup> ).	76	173718	Cemetery, Salem: Enclosed by fence.
37	108677	BRM Range 15, Maryland: Tower, height 3.7 m (12 ft), base 19 m <sup>2</sup> (204 ft <sup>2</sup> ); range house <sub>(2)</sub> ; latrine <sub>(1)</sub> .	77	178716	Cemetery, W. M. Martin, Emma G. Tucker, Kondall Co., Inc.
38	108659	Cemetery, Mrs. H. M. Stork.			
39	106648	Cemetery, St. Davids Methodist.			
40	103630	BRM Range 17, Texas: Tower, height 4.6 m (15 ft), base 24.9 m <sup>2</sup> (268 ft <sup>2</sup> ); range house, 14 m <sup>2</sup> (151 ft <sup>2</sup> ); two latrines <sub>(1)</sub> ; VIP shelter, 6.4 m <sup>2</sup> (69 ft <sup>2</sup> ); one set bleachers, capacity 20 men; storage shed, 16.2 m <sup>2</sup> (174 ft <sup>2</sup> ).			
41	119699	Cemetery, unnamed.			
42	124687	Normandy Bivouac Area: 12 concrete tent bases with wood plank sides <sub>(10)</sub> ; detached shower, 94.8 m <sup>2</sup> (1020 ft <sup>2</sup> ), concrete, concrete block, semi-permanent; four latrines <sub>(1)</sub> ; three storage sheds; butler building <sub>(7)</sub> and storage shed for use as First Aid Station; well house <sub>(1)</sub> .			
43	124685	Manila Bivouac Area: 10 concrete tent bases <sub>(10)</sub> ; two butler buildings <sub>(7)</sub> .			



L. NON-URBAN CULTURE FEATURES (Continued)

MAP NUMBER	GRID REFERENCE	DESCRIPTION*	MAP NUMBER	GRID REFERENCE	DESCRIPTION*
78	183657	Observation Post # 10: Concrete monument; observation bunker(12).	100	071642 to 127635 and	Government owned aerial power cable: Feeder, three conductors, 1/0 size ACSR; BN, size 1; three transformers, two 5 kVA capacity, 1 phase, one 10 kVA capacity, 1 phase.
79	178626	Cemetery, R. A. and Harold Boozer.		116635 to 129647	Government owned aerial power cable: BN, size 1; four transformers, two 10 kVA capacity, single phase, two 15 kVA capacity, single phase.
80	186682	RST # 3 (inactive): Observation tower, base 15.3 m <sup>2</sup> (165 ft <sup>2</sup> ); range house, 35.3 m <sup>2</sup> (380 ft <sup>2</sup> ); latrine/powerplant, 30.1 m <sup>2</sup> (324 ft <sup>2</sup> ); messhall, 155 m <sup>2</sup> (1668 ft <sup>2</sup> ); three bleachers, one each 260-, 60-, and 30-man capacity, permanent; one bleacher, capacity 24 men, temporary; all buildings are concrete block, semipermanent.	101	127635 to 129633	Government owned aerial power cable: Three conductors, size 6 C; one conductor, size 6 CN, 8320 volt, wye.
81	194685	RST # 4: Observation tower, 15.3 m <sup>2</sup> (165 ft <sup>2</sup> ); range house, 35.3 m <sup>2</sup> (380 ft <sup>2</sup> ); latrine, 31.6 m <sup>2</sup> (340 ft <sup>2</sup> ); messhall, 155 m <sup>2</sup> (1668 ft <sup>2</sup> ), all concrete block, semipermanent; three bleachers, one each 260-, 120-, and 30-man capacity; sand table; six two-man and 10 one-man concrete foxholes.	102	129633 to 131635	Government owned underground power cable: Three conductors, size 2; one conductor, size 6 N in four ducts; transformer, 75 kVA capacity, 3 phase PD MTD.
82	205691	Observation Post # 11: Concrete monument.	103	131635 to 157627	Government owned aerial power cable: Three conductors, size 1/0 ACSR; nine transformers, two 10 kVA capacity, single phase, four 15 kVA capacity, single phase, three 25 kVA capacity, single phase.
83	208650	Cemetery, Charlie M. Martin.	104	083639 to 108678	Government owned aerial power cable: Three conductors, size 6 C; 22 transformers, fourteen 5 kVA capacity, single phase, two 15 kVA capacity, single phase, four 10 kVA capacity, single phase, two 25 kVA capacity, single phase.
84	211677	Cemetery, J. E. Mills: Enclosed by fence.		and	
85	224667	Cemetery, unnamed.		108678 to 187684 and	Government owned aerial power cable: Three conductors, size 1 ACSR; four transformers, one each 5, 10, 15, 37.5 kVA capacity, all single phase.
86	228694	Cemetery, B. F. Bowen.		187684 to 193686 and	Government owned aerial power cable: Two conductors, size 4 ACSR; two transformers, one each 37.5, 50 kVA capacity, single phase.
87	227661	Tank Range (Tank Tables I, II, and III, inactive): Moving target track, narrow gage railroad with jeep cable pulley mechanism; two parallel earth berms, front berm, A, height 1.2 m (4 ft) to protect track, rear berm, B, approximate height 3 m (10 ft), of clay, 5 m (16 ft) between berms.		193686 to 197714	Government owned aerial power cable: Two conductors, size 6 C; transformer, 37.5 kVA capacity, single phase.
88	245700	Cemetery, Dabney Pond: Enclosed by fence.	105	134678 to 140706	Government owned aerial power cable: Two conductors, size 6 C; two transformers, one each 10, 15 kVA capacity, single phase.
89	259631	Leesburg Area (South Carolina Army National Guard): 11 range houses, 232.3 m <sup>2</sup> (2500 ft <sup>2</sup> ); two septic tanks; four latrines, two 17.8 m <sup>2</sup> (192 ft <sup>2</sup> ), one 26.8 m <sup>2</sup> (288 ft <sup>2</sup> ), one 236.3 m <sup>2</sup> (2544 ft <sup>2</sup> ); three OPNS, each 66.3 m <sup>2</sup> (714 ft <sup>2</sup> ); 15 training buildings, 13 each 232.3 m <sup>2</sup> (2500 ft <sup>2</sup> ), one 288.1 m <sup>2</sup> (3101 ft <sup>2</sup> ), one 236.4 m <sup>2</sup> (2544 ft <sup>2</sup> ); four gas storage tanks; one building under construction, approximately 232.3 m <sup>2</sup> (2500 ft <sup>2</sup> ); sentry station.	106	080684 to 107705	SCE&G owned underground power cable (no data).
90	263634	Elevated water tank: Approximate height 15.2 m (50 ft), steel and wood; well house, 3.3 m <sup>2</sup> (36 ft <sup>2</sup> ).	107	111708 to 126685	Government owned aerial power cable: Two conductors, size 6 C; five transformers, one 5 kVA, three 10 kVA, one 25 kVA capacity, each single phase.
91	270644	Known Distance Range "P" (KDP, inactive): Latrine (deteriorating); earth berm, approximate height 3.7 m (12 ft), length 50 m (164 ft), base 2.4 m (8 ft), top 0.3 m (1 ft).	108	254632 to 272679	Government owned aerial power cable: Two and three conductors, size 6 C wire; 13 transformers, one 5 kVA capacity, single phase, one 50 kVA capacity, 3 phase, one 37.5 kVA, 3 phase, three 10 kVA capacity, single phase, seven 25 kVA capacity, single phase; class 5 poles.
92	093619	At Old Heises Pond: Skeet range field office, 156.3 m <sup>2</sup> (1682 ft <sup>2</sup> ); snack-bar, 50.2 m <sup>2</sup> (540 ft <sup>2</sup> ); clubhouse, 232.7 m <sup>2</sup> (2505 ft <sup>2</sup> ); two latrines, each 5.9 m <sup>2</sup> (64 ft <sup>2</sup> ); well house, 5.9 m <sup>2</sup> (64 ft <sup>2</sup> ); bath house, 39 m <sup>2</sup> (420 ft <sup>2</sup> ).	109	070616 to 076621	Post range communication distribution system: Direct burial, 12 pairs, 19 gage wire.
93	084666	BRM Range 4, Florida: Tower, height 3.7 m (12 ft), base 19 m <sup>2</sup> (204 ft <sup>2</sup> ); three range houses, one 11.1 m <sup>2</sup> (120 ft <sup>2</sup> ), two(2); two latrines(1).	110	084640 to 080635	Post range communication system: Direct burial, six pairs, 19 gage wire, pairs 1 through 6.
94	141712	Marine Training Area: Range house, 29.7 m <sup>2</sup> (320 ft <sup>2</sup> ), metal siding on concrete block; training course structure, 55.7 m <sup>2</sup> (600 ft <sup>2</sup> ).	111	076599 to 084618	Post range communication system: Aerial, two pairs, 19 gage wire, figure 8.
95	062651 to 107678	Post range communication system: Aerial, cable 1, 50 pairs, 19 gage wire, pair 1011 through 1160.	112	058623 to 253631	Post range communication system: Aerial, cable 5, 25 pairs, 19 gage wire, pairs 1 through 25.
96	072600 to 084614	South Carolina Electric and Gas Company (SCE&G) owned underground power cable in duct: Two conductors, size 4 copper clad steel (Cu); transformer, 50 kVA capacity, 1 phase, at Twin Lakes.	113	058624 to 122611	Post range communication system: Aerial, cable 5, 25 pairs, 19 gage wire, pairs 26 through 50.
97	089600 to 093616	SCE&G owned underground power cable in duct: 23 kV, two conductors, size 2 aluminum cable, steel reinforced (ACSR); transformer, 15 kVA capacity, 1 phase, at Old Heises Pond.	114	122611 to 253631	Post range communication system: Aerial, cable 26, 25 pairs, 19 gage wire, pairs 1 through 25.
98	068647 to 069653	Government owned aerial power cable: Three conductors, size 6 copper, bare neutral (BN) - 1; five transformers, one 37.5 kVA capacity, 1 phase, one 37.5 kVA capacity, 3 phase, two 15 kVA capacity, 3 phase, and one 5 kVA capacity, 1 phase.	115	253631 to 272687	Post range communication system: Aerial, cable 26, 12 pairs, 19 gage wire, pairs 1 through 12; class 5 poles.
99	057659 to 056663	Government owned feeder power cable: Three conductors, size 6 copper wire (C).	116	122611 to 134678	Post range communication system: Aerial, cable 2, 25 pairs, 19 gage wire, pairs 1 through 25.
	061669 to 062668	Government owned aerial power cable: Two conductors, size 6 C; three transformers, 37.5 kVA capacity, 3 phase.	117	071642 to 121639	Post range communication system: Aerial, cable 21, 25 pairs, 19 PIC wire, pairs 1 through 25.
	073678 to 073677	Government owned aerial power cable: Two conductors, size 6 C; transformer, 5 kVA capacity, single phase.	118	107678 to 134679	Post range communication system: Cable 1, 25 pairs, 19 gage wire, pairs 1036 through 1060.
			119	061669 to 147723	Post range communication system: Aerial, cable 101, 18 pairs, 19 gage wire, pairs 102 through 119.
			120	145723 to 134679	Post range communication system: Aerial, cable 24, 25 pairs, 19 PIC wire, pairs 1 through 25.
			121	147724 to 272687	Post range communication system: Aerial, cable 27, 25 pairs, 19 gage wire, pairs 1 through 25.
			122	134678 to 198714	Post range communication system: Aerial, cable 25, 18 pairs, 19 gage wire, pairs 1 through 18.

Footnotes

\*All structures, unless otherwise noted, are wood and temporary.

Subscript  
Number

- (1) Latrine, 14.6 m<sup>2</sup> (157 ft<sup>2</sup>), wood, tar paper, temporary.
- (2) Range house, 14.5 m<sup>2</sup> (156 ft<sup>2</sup>), all wood, temporary.
- (3) Shelter (mess), length 6.1 m (20 ft), all wood, temporary.
- (4) Tower, height 3.7 m (12 ft), wood, temporary.
- (5) Bleachers, each set, capacity 150 men, wood with metal roof.
- (6) Tower, height 4.6 m (15 ft), area 29.1 m<sup>2</sup> (313 ft<sup>2</sup>), wood, temporary.
- (7) Butler building, approximately 11.1 m<sup>2</sup> (120 ft<sup>2</sup>), all metal, prefabricated, temporary.
- (8) Range house, 13.4 m<sup>2</sup> (144 ft<sup>2</sup>), wood, temporary.
- (9) Range house, 22.7 m<sup>2</sup> (244 ft<sup>2</sup>), wood, temporary.
- (10) Concrete tent base, approximately 26.8 m<sup>2</sup> (288 ft<sup>2</sup>).
- (11) Well house, 5.9 m<sup>2</sup> (64 ft<sup>2</sup>).
- (12) Observation bunker, 4.5 m<sup>2</sup> (48 ft<sup>2</sup>), concrete and steel reinforced, earth revetted.
- (13) Range house, 17.8 m<sup>2</sup> (192 ft<sup>2</sup>).
- (14) Bleachers, capacity 220 men, wood with metal roof.



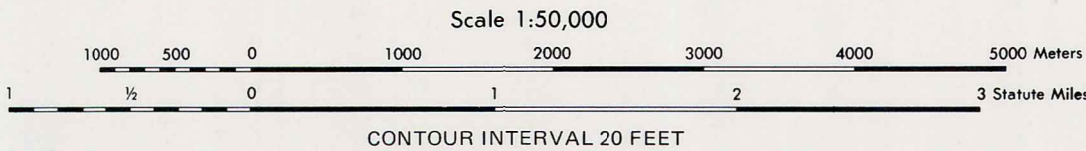
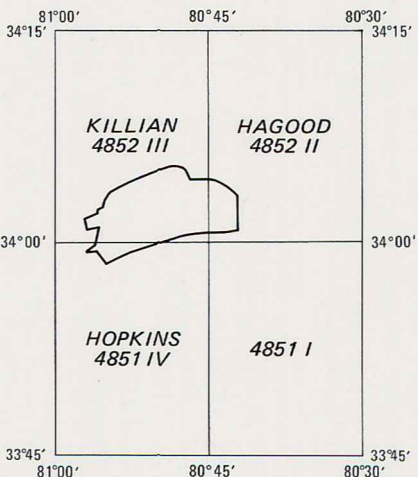
# FORT JACKSON, SOUTH CAROLINA TERRAIN ANALYSIS

## NON-URBAN CULTURE FEATURES

- Gas Chamber
- Building
- Tower (observation, fire, range)
- Radio Tower
- Water Tower
- Recreation Area
- Abandoned Airfield
- Permanent Bleachers
- Ammunition Dump
- Sanitary Landfill
- Observation Post/Bunker
- Moving Target
- Mock Village
- Telephone Line (aboveground)
- Powerline (aboveground)
- Underground Cable (telephone)
- Underground Cable (power)
- Cemetery

NOTE: Map number refers to entry in table.

1:50,000 SHEET INDEX  
Series V746



Prepared by Dames & Moore, Washington, DC, under the direction  
of the Terrain Analysis Center, U.S. Army Engineer Topographic  
Laboratories, Fort Belvoir, Virginia. April 1979.



III. OFF-POST FEATURES

A. AIRFIELDS

Three airfields within an 80-kilometer (50-mile) radius of Fort Jackson will support aircraft as large as C-130A's: Columbia Metropolitan Airport, approximately 26 kilometers (16 miles) west of the cantonment area; McEntire Air National Guard Base, approximately 16 kilometers (10 miles) southeast of the cantonment area; and Shaw Air Force Base, approximately 48 kilometers (30 miles) east of the cantonment area.

Since there are no operational airfields on Fort Jackson, the U.S. Army leases facilities at Columbia Metropolitan Airport. The airfield is under the auspices of the Richland-Lexington Airport District, which would assume control of the facility in case of a military alert.

NAME; LOCATION; CLASSIFICATION; AND TYPE	ELEVATION; AND STATUS	RUNWAY DESCRIPTION	TAXIWAY, PARKING, APRON, AND HARDSTAND AREA DESCRIPTION	BUILDING DESCRIPTION	POL FACILITIES	NAVIGATIONAL AIDS	REMARKS
Columbia Metropolitan Airport; 33°56'N, 81°07'W; Civilian airport, joint-use facility, U.S. Army and U.S. Army Reserve are tenants; Airfield.	72 m (236 ft); operational.	<p>East-West Runway 11-29 2302 x 45.7 m (7551 x 150 ft); azimuth 105°285°; maximum weight bearing capacity S72, T128, ST162, TT235°; asphalt surface, poor condition.</p> <p>Northeast-Southwest Runway 05-23 1524 x 45.7 m (5001 x 150 ft); azimuth 044°224°; maximum weight bearing capacity 27,216 kg (60,000 lb) gross weight; asphalt surface, fair condition.</p>	<p>SHARED FACILITIES <u>Taxiways</u> Approximately 16; four are 15.2 m (50 ft) wide, 12 are 22.9 m (75 ft) wide; maximum weight bearing capacity same as runway 11-29, except taxiways connecting with runway 05-23 which have same capacity as that runway; concrete and asphalt surface.</p> <p>CIVILIAN FACILITIES <u>Parking Area, Apron, and Hardstand</u> 149,094 m² (1,604,256 ft²) approximate total area; maximum weight bearing capacity same as runway 11-29; 29.2 cm (11.5 in) concrete surface.</p> <p>MILITARY FACILITIES <u>Parking Area, Apron, and Hardstand</u> 65,536 m² (705,162 ft²) approximate total area; maximum weight bearing capacity same as runway 11-29; asphalt resurfaced concrete.</p>	<p>CIVILIAN FACILITIES <u>Hangars</u> Nine hangars, one owned by State Aeronautics Commission, one by Miller Aviation, seven by Eagle Aviation; total area of hangars owned by Eagle Aviation 19,718 m² (64,689 ft²); metal with cinder block face.</p> <p><u>Administration and Terminal Building</u> Main terminal building; steel frame, brick, and concrete; 10,685 m² (115,000 ft²). Eagle Aviation, Administrative Building and East Office Facility; steel frame, concrete block, metal siding; 518 m² (5596 ft²).</p> <p><u>Maintenance Facilities</u> Three facilities owned by Eagle Aviation, two are in hangars; 2026 m² (21,812 ft²) total area.</p> <p><u>Other Facilities</u> Fire and rescue building.</p> <p>MILITARY FACILITIES <u>Hangars</u> One hangar; metal frame and siding; 1249 m² (13,440 ft²). New hangar construction to start 1 October 1978, planned completion 1 January 1979; 58.5 m long x 34 m wide x 8.5 m high (192 x 112 x 28 ft).</p> <p><u>Maintenance Facilities</u> One shop; 375 m² (4032 ft²).</p> <p><u>Administration Building</u> Metal and concrete block; 375 m² (4032 ft²).</p>	<p>Eagle Aviation supplies fuel and storage facilities for civilian and military operations. Two underground tanks totaling 90,840 liters (24,000 gal) Jet-A fuel. Four underground tanks, two 37,850 liter (10,000 gal) and two 45,420 liter (12,000 gal), 100 octane fuel tanks. Four fuel trucks, two Jet-A, each 8516.2 liters (2250 gal) and two 100 octane, 5677.5 and 9462.5 liters (1500 and 2500 gal). Dispensing tank, 3785 liters (1000 gal) automotive gas.</p>	<p><u>Control Tower</u> 34 m (112 ft) high not including antenna; scheduled weather broadcast, VHF Omni Directional Range Tactical Air Navigation (VORTAC); ILS.</p> <p><u>Lights</u> Rotating beacon; approach lights; high intensity runway lights; high intensity approach lights; sequenced flashing lights; Runway End Identifier Lights (REIL) (threshold strobe lights); runway centerline lights.</p>	<p>Prior notice required for refueling Army planes. Army Reserve attended 1300 to 2200Z (daylight saving time 1200 to 2100Z) Monday through Friday except holidays, standby military personnel at other times. Runways and taxiways designed for much lighter aircraft than now in use; designed for DC-9, gross weight 52,164 kg (115,000 lb), used by L-1011, gross weight 186,429.6 kg (411,000 lb). Pavement is highly overstressed; runway 11-29 cracking, scheduled for resurfacing October 1978; taxiways will remain as is. Airfield under control of Richland-Lexington Airport District. Military facilities house the U.S. Army, U.S. Army Reserve, 498th Medical Company, and 120th Air Command.</p>
McEntire Air National Guard Base; 33°55'N, 80°48'W; Air Force; Airfield.	76.5 m (251 ft); operational.	<p>Northwest-Southeast Runway 2742.6 x 45.7 m (8998.1 x 150 ft); azimuth, 140°320°; maximum weight bearing capacity S33, T55, ST105, TT170, TDT110; 15.2 cm (6 in) portland cement concrete surface.</p> <p>Northeast-Southwest Runway 1371.6 x 45.7 m (4500 x 150 ft); azimuth, 040°220°; maximum weight bearing capacity same as northwest-southeast runway; 15.2 cm (6 in) portland cement concrete surface; closed.</p> <p>North-South Runway 1371.6 x 45.7 m (4500 x 150 ft); azimuth 004°184°; maximum weight bearing capacity same as northwest-southeast runway; 15.2 cm (6 in) portland cement concrete surface; closed.</p>	<p><u>Taxiway</u> One; 15.2 m (50 ft) wide; maximum weight bearing capacity S25, T60, ST75, TDT85; portland cement concrete and asphaltic concrete surfaces.</p> <p><u>Parking Area, Apron, and Hardstand</u> 108,836 m² (1,171,500 ft²) total area; maximum weight bearing capacity S25 to S65, T60 to T165, ST75 to ST155, TDT255 to TT390, TDT85 to TDT220; portland cement concrete surface.</p>	<p><u>Hangars</u> Combined hangar, maintenance, and administration building, number 253; structural steel, masonry and metal facing; 61 m long x 61 m wide x 9 m high (200 x 200 x 30 ft). Four alert barns (aircraft maintenance hangars), buildings numbers 63, 64, 261, and 262; one plane each, each 372 m² (4000 ft²). Helicopter hangar, Army Aviation Facility (tenant), building number 165; 2204 m² (23,727 ft²).</p> <p><u>Maintenance Facilities</u> Three maintenance buildings, numbers 60, 68 (old avionics building), and 216; 1919 m² (20,660 ft²), 252 m² (3795 ft²), and 1044 m² (11,236 ft²), respectively. Space within hangar, building number 253; 1691 m² (18,207 ft²).</p> <p><u>Administration and Terminal Buildings</u> Operations building, number 249; 1621 m² (17,451 ft²). Space within hangar, building number 253; 150 m² (1620 ft²).</p> <p><u>Other Buildings</u> Fire and rescue station, building number 61; 219 m² (2362 ft²).</p>	<p>Six tanks, totaling 567,750 liters (150,000 gal); underground; jet fuel, (JP-4 Mil spec), 94,625 liters (25,000 gal); underground; aviation gasoline. 26,495 liters (7000 gal); underground; motor pool gasoline. Five 18,925 liter (5000 gal) trucks for JP-4; one 5678 liter (1500 gal) truck for aviation gasoline; one 4542 liter (1200 gal) truck for motor pool gasoline; three 4542 liter (1200 gal) trucks for diesel fuel; four 2271 liter (600 gal) trailers. U.S. aviation oils available: jet engine oils, grades 1005 and 1010 (MIL-L-6081); turbine engine oil (MIL-L-7808); turboprop and turboshaft engines (MIL-L-23699). Low pressure oxygen servicing. Liquid oxygen servicing.</p>	<p><u>Control Tower</u> 19 m (62.2 ft) high; Tactical Air Navigation (TACAN MMT) and ILS monitored only during air traffic control operating hours.</p> <p><u>Lights</u> Rotating beacon; high intensity runway and approach lights; sequenced flashing lights; visual approach slope indicator systems.</p>	<p>Operating hours 1300 to 2100Z (daylight saving time 1200 to 2000Z) Monday through Friday except holidays; fire and medical services available during operating hours.</p>
Shaw Air Force Base; 33°58'N, 80°28'W; Air Force; Airfield.	73.4 m (241 ft); operational.	<p>Runway 04L-22R 3048 x 45.7 m (10,000 x 150 ft); maximum weight bearing capacity S50, T125, ST125, TT175, TDT490; azimuth 037°217°; 5 cm (2 in) asphaltic concrete over approximately 8 cm (20 in) portland cement concrete.</p> <p>Runway 04R-22L 2438.4 x 45.7 m (8000 x 150 ft); maximum weight bearing capacity S110, T230, ST200, TT350, TDT800; azimuth 037°217°; approximately 33 cm (13 in) portland cement concrete, 1829 m (6000 ft) of which has wire comb finish.</p>	<p><u>Taxiways</u> 13; 15.2 to 61 m (50 to 200 ft) wide; maximum weight bearing capacity S25 to S140, T60 to T230, ST65 to ST200, TT135 to TT380, TDT330 to TDT800; 15 to 38 cm (6 to 15 in) portland cement concrete, some with 5 to 10 cm (2 to 4 in) asphaltic concrete overlay.</p> <p><u>Parking Area, Apron, and Hardstand</u> 436,876.5 m² (4,702,500 ft²) total area; maximum weight bearing capacity S25 to S50, T60 to T120, ST65 to ST120, TT175, TDT315 to TDT485; 15 to 33 cm (6 to 13 in) portland cement concrete surface.</p>	<p><u>Four Hangars</u> Building number 611; metal; 4914.2 m² (52,896 ft²), 10 m (33 ft) high. Building number 712; metal; 4368.7 m² (47,024 ft²), 10 m (33 ft) high. Building number 1200; metal; 17,081.7 m² (183,866 ft²), 20.7 m (68 ft) high. Building number 1614; concrete block; 7748.7 m² (83,406 ft²), 19.8 m (65 ft) high.</p> <p><u>Maintenance Facilities</u> 28 maintenance buildings; 23,603 m² (254,062 ft²) total area.</p> <p><u>Administration and Terminal Buildings</u> Nine operations buildings; 5602.6 m² (60,306 ft²) total area. Control tower, building number 1201; concrete block; 292 m² (3144 ft²).</p> <p><u>Other Buildings</u> Flight simulator training, building number 1505; concrete block; 745.4 m² (8024 ft²). Fire station, building number 706; wood with asbestos siding; 1183.3 m² (12,737 ft²).</p>	<p>Tanks: 7,650,654.5 liters (2,021,309 gal) jet fuel (JP-4 Mil spec); most above-ground. 420,695.2 liters (111,148 gal) aviation gasoline. 13 trucks for JP-4; one truck for aviation gasoline. U.S. aviation oils available: reciprocating engine oil (MIL-L-22851 Type II); jet engine oil, grade 1010 (MIL-L-6081); turbine engine oil (MIL-L-7808). Air compressors rated 210.9 kg/cm² (3000 lb/in²) or more. Low pressure oxygen servicing. Liquid oxygen servicing.</p>	<p><u>Control Tower</u> 26.4 m (86.7 ft) high; Tactical Air Navigation (TACAN) and ILS.</p> <p><u>Lights</u> Rotating beacon; portable light by prior request only; high intensity runway lights on runway 04L-22R; high intensity approach lights - approach lights for runway 04L, 701 m (2300 ft), are nonstandard; sequenced flashing lights; visual approach slope indicator systems.</p>	<p>Aircraft above 72,576 kg (160,000 lb) require 24 hr prior coordination. Jet low altitude weapons training in progress immediately southeast. C-5 aircraft require prior permission except in emergencies or when suitable alternate is not available.</p>



III. OFF-POST FEATURES(Continued)

A. AIRFIELDS (Continued)

\*Runway weight bearing capacity in pounds (gross weight of aircraft) is determined by adding 000 to figure following S, T, ST, TT, TDT. Runway weight bearing capacity given is for unlimited operations. Aircraft weight higher than given requires prior permission from aerodrome controlling authority.

- S - Runway weight bearing capacity for aircraft with single-wheel type landing gear (C-47, F100).
- T - Runway weight bearing capacity for aircraft with twin-wheel type landing gear (C-9A).
- ST - Runway weight bearing capacity for aircraft with single-tandem landing gear (C-130).
- TT - Runway weight bearing capacity for aircraft with twin-tandem type (includes quadricycle) landing gear (B-52, C-135).
- TDT - Runway weight bearing capacity for aircraft with twin-delta tandem landing gear (C-5).

For further information, see DOD Flight Information Publication (Enroute IFR-Supplement United States).

B. URBAN AREAS

Twenty-five urban areas within 80 kilometers (50 miles) of the reservation had 1970 census populations greater than 2500. These areas are within six of eight South Carolina Council of Governments Regional Planning Districts; 37 percent of the population within the 80-kilometer (50-mile) radius is concentrated around the city of Columbia.

The two smallest population areas include Bamberg, Denmark, Williston, and Orangeburg, approximately 72 kilometers (45 miles) south of the cantonment area, with a combined population of over 23,600 persons. Orangeburg is linked to Columbia by Interstate 26. Chester, Great Falls, Lancaster, Lancaster Mills, and Springdale (unincorporated), approximately 72 kilometers (45 miles) north of the cantonment area, with a combined population of just over 23,700, use U.S. Highway 321 as an access route to Columbia and Fort Jackson.

Sumter, in Sumter County, 72 kilometers (45 miles) east of the reservation, is the second largest population area and the second largest urban area within 80 kilometers (50 miles) of Fort Jackson. This population area

includes Bishopville, Camden, Manning, Shannontown, and Shaw. Commuters would probably follow Interstate 20 and U.S. Highways 76 and 378 into Fort Jackson.

Columbia, the capital of South Carolina, with a combined standard metropolitan statistical area (SMSA) population of over 160,500, adjoins the cantonment area on the west. The SMSA consists of Columbia, Forest Acres, Cayce, West Columbia, Springdale, Batesburg, Winnsboro, Newberry, and Johnston. The military population is important to the area's economy; it includes active duty military personnel and retired personnel who located in the area to take advantage of climate, open space, and the availability of army medical service, commissary, and exchange facilities. This area is one of the most rapidly developing centers in the southeastern United States. Limitations to continued expansion include restraints on energy resources. Completion of the proposed southeast freeway in Columbia would provide access around the southern side of the city.

The most recent available data were used to compile the table below.

NAME AND LOCATION	POPULATION	HOUSING AVAILABILITY	EDUCATIONAL FACILITIES	MEDICAL FACILITIES	RECREATIONAL FACILITIES	UTILITIES AND SERVICES
Bamberg, SC 33° 17' N 81° 02' W	1970: 3406 1975 est: 3368 1978 projection: 6569  (1977 data)	<u>Single-Family Units</u> Total units: 1805 Rental units: 676 Vacancy rate: 3.7 percent Average sale price: \$8100 Average rent per month: \$40 to \$59  <u>Multi-Family Units</u> Total units: 535 Average rent per month: 1 bedroom: \$120 2 bedroom: \$135 3 bedroom: \$150  (1978 data)	<u>Public Schools (Bamberg County School District No. 1)</u> 2 Elementary Schools 1977 enrollment: 769 Enrollment capacity: at capacity 2 Middle Schools 1977 enrollment: 602 Enrollment capacity: 632 Richard Carroll Junior High School 1977 enrollment: 377 Enrollment capacity: 407 Bamberg-Ehrhardt High School 1977 enrollment: 480 Enrollment capacity: at capacity  <u>Private Schools</u> Andrew Jackson Academy (Kindergarten through High School)  (1978 data)	Bamberg County Memorial Hospital 55 beds  1 County Nursing Center  Doctors Total: 3 Ratio*: 1/1123  Dentists Total: 2 Ratio*: 1/1684  (1978 data)	5 Tennis courts 3 Playgrounds 2 Softball fields 1 Auditorium 1 Baseball field 1 Basketball court 1 Football field 1 Playfield 1 Swimming pool (public) 1 Track and field facility  (1978 data)	<u>Electric</u> Source: Edisto Electric Company and a county owned electric cooperative  <u>Heating Fuels</u> Natural gas Source: Carolina Pipeline Company; local natural gas authorities are distributors Supply: adequate  <u>Water Supply</u> Source: several deep community wells  <u>Sewage Disposal</u> Sewerage and wastewater treatment are provided by the Bamberg County Sewage Treatment Plant.  (1978 data)
Batesburg, SC 33° 54' 18" N 81° 32' 42" W	1970: 4036 1975 est: 3905  (1977 data)	<u>Single-Family Units</u> Total units: 1297 Rental units: 370 Vacancy rate: 7 percent Average sale price: \$33,200 Average rent per month: \$240  (1978 data)  <u>Multi-Family Units</u> Total units: 70 Average rent per month: 1 bedroom: \$224 2 bedroom: \$255 3 bedroom: \$350 One set of duplex apartments 2 bedroom only: \$128  (1978 data)	<u>Public Schools (Lexington School District No. 3)</u> Batesburg Elementary School 1977 enrollment: 456 Enrollment capacity: 500 Batesburg-Leesville Middle School (grades 5 through 8) 1977 enrollment: 814 Enrollment capacity: at capacity Batesburg-Leesville High School 1977 enrollment: 840 Enrollment capacity: 850  <u>Private Schools</u> W. Wyman King Academy (grades K through 12) 1977 enrollment: 259  (1978 data)	Use Cayce's, West Columbia's, and Columbia's medical, nursing home, mental health, and alcohol and drug abuse facilities.  Doctors Total: 2 Ratio: 1/1953  Dentists Total: 3 Ratio: 1/1302  (1977 data)	3 Basketball courts 3 Softball fields 2 Baseball fields 2 Football/soccer fields 1 Gymnasium 1 Playground 1 Tennis court 2 Spectator facilities 1 Library  (1978 data)	<u>Electric</u> Source: South Carolina Electric and Gas, Mid Carolina Electric Cooperative, and Tri-County Cooperative, Inc. Supply: more than ample  <u>Heating Fuels</u> Natural gas Source: South Carolina Electric and Gas Supply: adequate  <u>Water Supply</u> Source: Batesburg Municipal Water Works  <u>Sewage Disposal</u> The municipality of Batesburg provides area sewerage service.  (1978 data)
Bishopville, SC 34° 13' 06" N 80° 14' 54" W	1970: 3404 1975 est: 3151  (1977 data)	<u>Single-Family Units</u> Total units: 1104 Rental units: 362 Vacancy rate: 10 percent Average sale price: \$6300 Average rent per month: \$43  (1970 data)  <u>Multi-Family Units</u> Total units: 614 Average rent per month: 1 bedroom: \$135 2 bedroom: \$150 3 bedroom: \$160  (1977 data)	<u>Public Schools (Lee County School District)</u> Bishopville Primary School 1977 enrollment: 594 Enrollment capacity: at capacity Bishopville Middle School 1977 enrollment: 641 Enrollment capacity: 656 Bishopville Junior High School 1977 enrollment: 600 Enrollment capacity: 650 2 Senior High Schools (Ashwood High School, Bishopville High School) 1977 enrollment: 1247 Enrollment capacity: 1347  <u>Private Schools</u> Robert E. Lee Academy 1977 enrollment: 653  <u>Vocational Schools</u> Lee County Vocational Center  (1978 data)	Lee County Memorial Hospital 35 beds  1 Mental Health Clinic  Doctors Total: 7 Ratio: 1/450  Dentists Total: 2 Ratio: 1/1575  (1977, 1978 data)	6 Basketball courts 5 Baseball fields 4 Tennis courts 3 Tot lots 2 Football fields 1 Multipurpose court 1 Playground 1 Track and field facility  (1978 data)	<u>Electric</u> Source: Carolina Power and Light Supply: ample  <u>Heating Fuels</u> Natural gas Source: Carolina Pipeline Company Average BTU of gas supplied (specific gravity 0.582 to 0.595, pressure 5 to 450 psi): 1033 per cubic foot  Four bulk stations in the community provide number 1 and number 2 fuel oil.  <u>Water Supply</u> Source: three deep wells Combined pumping capacity: 3.785 x 10 <sup>6</sup> lpd (1 x 10 <sup>6</sup> gpd) <sup>†</sup> Peak daily demand: 2.3 x 10 <sup>6</sup> liters (0.6 x 10 <sup>6</sup> gal) Elevated storage: one 946,250-liter (250,000-gal) tank and one 283,875-liter (75,000-gal) tank Reservoir: 529,900 liters (140,000 gal)  <u>Sewage Disposal</u> Bishopville operates two interconnected systems.  Design capacity: 2.1 x 10 <sup>6</sup> lpd (0.55 x 10 <sup>6</sup> gpd) Present demand: 1.5 x 10 <sup>6</sup> lpd (0.4 x 10 <sup>6</sup> gpd)  (1978 data)
Camden, SC 34° 15' 42" N 80° 36' 24" W	1970: 8532 1975 est: 8700 1980 projection: 9500 1990 projection: 10,600  (1978 data)	<u>Single-Family Units</u> Total units: 2967 Rental units: 862 Vacancy rate: 15.7 percent Average sale price: \$12,500 Average rent per month: \$87  (1970 data)  <u>Multi-Family Units</u> Total units: 1000 Average rent per month: Efficiency: \$135	<u>Public Schools (Kershaw County School District)</u> 4 Elementary Schools 1977 enrollment: 2240 Enrollment capacity: data not available Camden Middle School 1977 enrollment: 1166 Enrollment capacity: data not available Camden Senior High School 1977 enrollment: 1574 Enrollment capacity: data not available	Camden is served by Kershaw County Hospital in Kershaw, SC 121 beds 2 beds CCU 2 beds ICU/CCU*  1 Nursing Home 88 beds  Kershaw County Mental Health Clinic	17 Baseball fields 14 Ball fields 14 Tennis courts 11 Playgrounds 7 Tot lots 6 Basketball courts 6 Football fields 3 Picnic areas 2 Gardens/trails 1 Golf course 1 Gymnasium 1 Multipurpose court 1 Spectator facility 1 Track and field facility	<u>Electric</u> Source: Carolina Power and Light Supply: ample  <u>Heating Fuels</u> Natural gas Source: Carolina Pipeline Company  Other fuels are provided by seven oil distributors and two liquefied petroleum gas distributors.



III. OFF-POST FEATURES (Continued)

B. URBAN AREAS (Continued)

NAME AND LOCATION	POPULATION	HOUSING AVAILABILITY	EDUCATIONAL FACILITIES	MEDICAL FACILITIES	RECREATIONAL FACILITIES	UTILITIES AND SERVICES
Camden, SC (Continued)		1 bedroom: \$140 2 bedroom: \$150 3 bedroom: \$165  (1977 data)	Private Schools 4 Kindergartens 1977 enrollment: 64  3 Other Private Schools 1977 enrollment: 285  Vocational Schools Kershaw County Vocational School  (1978 data)	Doctors Total: 27 Ratio: 1/322  Dentists Total: 8 Ratio: 1/1037  (1977, 1978 data)	2 Movie theaters 1 Bowling alley  (1978 data)	Water Supply Source: Wateree River, Diceys Creek, and a 13.4-hectare (33-acre) reservoir Capacity: 15.1 x 10 <sup>6</sup> lpd (4 x 10 <sup>6</sup> gpd) Peak demand: 13.2 x 10 <sup>6</sup> lpd (3.5 x 10 <sup>6</sup> gpd) Average daily demand: 6 x 10 <sup>6</sup> liters (1.6 x 10 <sup>6</sup> gal)  Sewage Disposal Municipal system consists of two 6.1-hectare (15-acre) oxidation ponds.  Combined daily capacity: 3.4 x 10 <sup>8</sup> liters (0.9 x 10 <sup>8</sup> gal)  (1978 data)
Cayce, SC 33° 58' N 81° 03' W	1970: 10,486 1975 est: 10,434  (1975 data)	Single-Family Units Total units: 3136 Rental units: 657 Vacancy rate: 21 percent Average sale price: \$22,000 Average rent per month: \$200  (1978 data)  Multi-Family Units Total units: 336 Vacant units: 40 Vacancy rate: 11.9 percent Average rent per month: 1 bedroom: \$157 2 bedroom: \$159 3 bedroom: \$208  (1978 data)	Public Schools (Lexington County School District No. 2) 2 Elementary Schools 1977 enrollment: 1220 Cyril B. Busbee Middle School 1977 enrollment: 750 Enrollment capacity: 800 Brookland-Cayce High School 1977 enrollment: 1900 Enrollment capacity: 2000  Special Schools Cayce Center for the Mentally Handicapped Student (elementary) 1977 enrollment: 40 Enrollment capacity: 100  Private Schools Gingerbread House Kindergarten 1977 enrollment: 26  (1978 data)	Use Columbia's hospital, nursing home, mental health, and alcohol and drug abuse facilities, see below.  Doctors Total: 3 Ratio: 1/3478  Dentists Total: 2 Ratio: 1/5217  (1976, 1977 data)	6 Parks/playfields 5 Softball fields 4 Baseball fields 4 Multipurpose courts 4 Playgrounds 3 Football/soccer fields 3 Tot lots 2 Swimming pools 1 Public library  (1978 data)	Electric Source: South Carolina Electric and Gas, and four electric cooperatives (Central Electric Power Cooperative, Inc., Tri-County Cooperative, Inc., Mid Carolina Electric Cooperative, and Fairfield Electric Cooperative, Inc.) Combined supply: 4 x 10 <sup>8</sup> kW with reserve capacity of more than 20 percent  Heating Fuels Natural gas Source: Carolina Pipeline Company and South Carolina Electric and Gas Supply: adequate  Water Supply Source: Congaree River; Columbia Water Works Average consumption: 8.7 x 10 <sup>6</sup> lpd (2.3 x 10 <sup>6</sup> gpd) Peak consumption: 12.5 x 10 <sup>6</sup> lpd (3.3 x 10 <sup>6</sup> gpd) Pumping capacity: 17 x 10 <sup>6</sup> lpd (4.5 x 10 <sup>6</sup> gpd) Type of treatment: coagulation, sedimentation, filtration, fluoridation, chlorination, pH adjustment  (1977 data)
Chester, SC 34° 43' N 81° 12' W	1970: 7045 1975 est: 7251  (1977 data)	Single-Family Units Total units: 2347 Rental units: 753 Vacancy rate: 6.8 percent Average sale price: \$13,100 Average rent per month: \$40  (1970 data)  Multi-Family Units Total units: 970 Average rent per month: Efficiency: \$130 1 bedroom: \$145 2 bedroom: \$155 3 bedroom: \$170  (1978 data)	Public Schools (Chester County School District) 4 Elementary Schools 1977 enrollment: 2180 Enrollment capacity: 2280 Chester Junior High School 1977 enrollment: 782 Enrollment capacity: at capacity Chester Senior High School 1977 enrollment: 1363 Enrollment capacity: at capacity  Private Schools 3 Private Schools (1 community kindergarten, 1 Christian school, 1 day academy) 1977 enrollment: 294  Vocational Schools Chester County Vocational School  A federally funded speech therapist travels throughout the county. The talented and gifted children program is now located at York Road Elementary.  (1978 data)	Chester County Hospital 119 beds 5 beds ICU/CCU  1 Chester County Nursing Center 62 beds  1 Community Mental Health Center  1 Alcohol and Drug Abuse Center  Doctors Total: 13 Ratio: 1/558  Dentists Total: 5 Ratio: 1/1450  (1976, 1977 data)	9 Softball fields 8 Playgrounds 5 Basketball courts 4 Fishing spots 4 Multipurpose courts 3 Football/soccer fields 3 Swimming pools 2 Golf courses 2 Gymnasiums 2 Sightseeing spots 2 Tennis courts 2 Tot lots 1 Airport (for gliding) 1 Spectator facility 1 Hiking trail Chester Little Theatre  (1978 data)	Electric Source: Lockhart Power Company, Duke Power Company, Fairfield Cooperative, Inc., and York Electric Cooperative, Inc.  Generating plants are on the Catawba River; new Duke Power Company plant expected completion 1979-1980.  Heating Fuels Natural gas Source: Carolina Pipeline Company and the Chester County Gas Authority  Water Supply Source: Chester Metropolitan Water District  (1978 data)
Columbia, SC 33° 59' N 81° 02' W	1970: 113,542 1975 est: 111,616  (1976 data)	Single-Family Units Total units: 14,409 Rental units: 6745 Vacancy rate: 6.2 percent Average sale price: \$16,900 Average rent per month: \$165  (1978 data)  Multi-Family Units Total units: 5754 Vacant units: 121 Vacancy rate: 2.1 percent Average rent per month: 1 bedroom: \$116 2 bedroom: \$168 3 bedroom: \$203  (1978 data)	Public Schools (Richland County Districts Nos. 1 and 2) District 1 27 Elementary Schools 1977 enrollment: 12,127 Enrollment capacity: 13,238 11 Middle Schools 1977 enrollment: 6209 Enrollment capacity: 8001 5 High Schools 1977 enrollment: 6636 Enrollment capacity: 6607  Within Richland District No. 1 there are 2 special schools (Waverly Center, and Withers Orthopedic) 1977 enrollment: 113 Other special schools are the Babcock Center, and Happy Time Special School.  District 2 5 Elementary Schools 1977 enrollment: 3422 Enrollment capacity: 2949  The Anna Boyd Child Development Center is also located in Richland District No. 2.  2 Middle Schools (grades 6 through 8) 1977 enrollment: 2135 Enrollment capacity: 2350 2 High Schools 1977 enrollment: 4088 Enrollment capacity: 2750  Wilson Vocational Annex is also in Richland District No. 2.  Special classes are in all public schools, in addition to the above mentioned.  Richland District No. 2 is not in the city limits, but has a Columbia address.	7 Hospitals (3 psychiatric; 1 tuberculin; 1 alcohol and drug abuse treatment center; 1 VA; and 1 Army military hospital) 2781 beds 22 beds CCU 57 beds ICU/CCU  5 Nursing Care Centers 704 beds  Columbia Area Mental Health Center; 2 mental health clinics  6 Alcohol and Drug Abuse Centers  Doctors Total: 576 Ratio: 1/194  Dentists Total: 141 Ratio: 1/792  (1976, 1977 data)	43 Playgrounds 32 Tennis courts 30 Ballfields (baseball, softball) 19 Parks 13 Gymnasiums 8 Pools (4 private) 6 Playfields (baseball, softball, football, tennis, basketball, volleyball, and track) 3 Community recreation centers 1 Art museum 1 Science museum 29 Theaters (10 drive-in, 19 indoor) 1 Zoological park  (1978 data)	Electric Source: South Carolina Electric and Gas, and four electric cooperatives (Central Electric Power Cooperative, Inc., Tri-County Cooperative, Inc., Mid Carolina Electric Cooperative, and Fairfield Electric Cooperative, Inc.) Combined supply: 4 x 10 <sup>8</sup> kW with reserve capacity of more than 20 percent  Heating Fuels Natural gas Source: Carolina Pipeline Company and South Carolina Electric and Gas Supply: adequate  Water Supply Source: Broad River; Columbia Water Works Average consumption: 113.6 x 10 <sup>6</sup> lpd (30 x 10 <sup>6</sup> gpd) Peak consumption: 166.5 x 10 <sup>6</sup> lpd (44 x 10 <sup>6</sup> gpd) Pumping capacity: 344.4 x 10 <sup>6</sup> lpd (91 x 10 <sup>6</sup> gpd) Type of treatment: coagulation, sedimentation, filtration, fluoridation, chlorination, pH adjustment.  (1977 data)



III. OFF-POST FEATURES (Continued)

B. URBAN AREAS (Continued)

NAME AND LOCATION	POPULATION	HOUSING AVAILABILITY	EDUCATIONAL FACILITIES	MEDICAL FACILITIES	RECREATIONAL FACILITIES	UTILITIES AND SERVICES
Columbia, SC (Continued)			<p>State Supported Schools Midlands Center 1977 enrollment: 460 South Carolina Department of Youth Services 1977 enrollment: 525</p> <p>Private Schools 33 Kindergartens 1977 enrollment: 692 12 Other Private Schools (combined include grades K through 12) 1977 enrollment: 3356</p> <p>Colleges and Universities University of South Carolina 1977 enrollment: 22,175 College of General Studies, a branch of USC 1977 enrollment: 1402 Midlands Technical College 1977 enrollment: 5592 Allen University 1977 enrollment: 401 Benedict College 1977 enrollment: 2031 Columbia Bible College 1977 enrollment: 711 Columbia College 1977 enrollment: 910 Lutheran Theological Seminary 1977 enrollment: 173</p> <p>Vocational Schools 3 Vocational Schools (Eau Claire Career Center, Lynhaven Career Center, and Wilson Vocational School)</p> <p>(1978 data)</p>			
Denmark, SC 33° 19' 24" N 81° 08' 30" W	1970: 3571 1975 est: 3660 1978 projection: 6617  (1977 data)	<p>Single-Family Units Total units: 1208 Rental units: 462 Vacancy rate: 3.8 percent Average sale price: \$12,000 Average rent per month: \$40 to \$59</p> <p>(1970 data)</p> <p>Multi-Family Units Total units: 43 Average rent per month: 1 bedroom: \$118 2 bedroom: \$130 3 bedroom: \$145</p> <p>(1978 data)</p>	<p>Public Schools (Bamberg County School District No. 2) Denmark Elementary School 1977 enrollment: 874 Enrollment capacity: at capacity Denmark Junior High School 1977 enrollment: 315 Enrollment capacity: at capacity Denmark-Olar High School 1977 enrollment: 510 Enrollment capacity: at capacity</p> <p>Colleges and Universities Denmark Technical College 1977 enrollment: 791 Voorhees College 1977 enrollment: 954</p> <p>(1978 data)</p>	<p>Use Bamberg County Memorial Hospital and Nursing Center, see above.</p> <p>Doctors Total: 2 Ratio: 1/1830</p> <p>Dentists Total: 2 Ratio: 1/1830</p> <p>(1978 data)</p>	<p>8 Basketball courts 8 Tennis courts (6 public) 4 Softball/baseball fields 2 Football fields 2 Gymnasiums 1 Golf course (9-hole, private) 1 Playground 1 Spectator facility 1 Swimming pool (private) 1 Track and field facility 1 Tot lot</p> <p>(1977 data)</p>	<p>Electric Source: South Carolina Electric and Gas Supply: adequate</p> <p>Heating Fuels Natural gas Source: South Carolina Electric and Gas Supply: adequate</p> <p>Water Supply Source: Denmark Municipal Water Works</p> <p>Sewage Disposal Municipal system</p> <p>(1978 data)</p>
Forest Acres, SC 34° 02' N 80° 57' W	1970: 6808 1975 est: 6897  (1977 data)	<p>Single-Family Units Total units: 2185 Rental units: 340 Vacancy rate: 4.1 percent Average sale price: \$36,000 Average rent per month: \$250</p> <p>(1977 data)</p> <p>Multi-Family Units Total units: 795 Vacant units: 15 Vacancy rate: 1.9 percent Average rent per month: 1 bedroom: \$193 2 bedroom: \$225 3 bedroom: \$261 One apartment complex in Forest Acres is a condominium. 2 bedroom: \$29,500 and \$30,500 3 bedroom: \$38,500; \$39,500; \$41,000; and \$43,800</p> <p>(1978 data)</p>	<p>Public Schools (Richland County District No. 1) 3 Elementary Schools 1977 enrollment: 639 Enrollment capacity: 832</p> <p>Statistics are for two elementary schools only, no statistics found for Crayton Elementary.</p> <p>Crayton Middle School (grades 6 through 8) 1977 enrollment: 604 Enrollment capacity: 895 A.C. Flora High School 1977 enrollment: 1281 Enrollment capacity: 1576</p> <p>Private Schools Timmerman School (grades K through 8) 1977 enrollment: 547 Cardinal Newman High School (parochial) 1977 enrollment: 379</p> <p>(1978 data)</p>	<p>Use Columbia's hospital, nursing home, mental health, and alcohol and drug abuse facilities, see above.</p>	<p>Use Columbia's recreational facilities, see above.</p> <p>6 Softball fields 4 Basketball courts 4 Gymnasiums 4 Playgrounds 3 Baseball fields 3 Football/soccer fields 3 Multipurpose courts 3 Tennis courts 2 Swimming pools 1 Park 1 Public library</p> <p>(1978 data)</p>	<p>Electric Source: South Carolina Electric and Gas, and four electric cooperatives (Central Electric Power Cooperative, Inc., Tri-County Cooperative, Inc., Mid Carolina Electric Cooperative, and Fairfield Electric Cooperative, Inc.) Combined supply: 4 x 10<sup>6</sup> kW with reserve capacity of more than 20 percent</p> <p>Heating Fuels Natural gas Source: Carolina Pipeline Company and South Carolina Electric and Gas Supply: adequate</p> <p>Water Supply Source: Broad River; Columbia Water Works</p> <p>Consumption statistics are hidden within those of Columbia, see above.</p> <p>(1977 data)</p>
Great Falls, SC 34° 34' 06" N 80° 53' 48" W	1970: 2727 1975 est: 2563  (1977 data)	<p>Single-Family Units Total units: 1180 Rental units: 181 Vacancy rate: 6.6 percent Average sale price: \$20,000 Average rent per month: \$99</p> <p>(1970 data)</p> <p>Multi-Family Units Total units: 550 Average rent per month: 1 bedroom: \$142 2 bedroom: \$150 3 bedroom: \$163</p> <p>(1977 data)</p>	<p>Public Schools (Chester County School District) Great Falls Elementary School 1977 enrollment: 675 Enrollment capacity: 775 Great Falls Middle School 1977 enrollment: 430 Enrollment capacity: at capacity Great Falls High School 1977 enrollment: 440 Enrollment capacity: at capacity</p> <p>A Federally funded speech therapist travels throughout the county.</p> <p>(1978 data)</p>	<p>Use Chester County Hospital, see above.</p> <p>Doctors Total: 3 Ratio: 1/854</p> <p>Dentists Total: 1 Ratio: 1/2563</p> <p>(1976, 1977 data)</p>	<p>3 Basketball courts 3 Football/soccer fields 3 Gymnasiums 2 Boating facilities (1 public, 1 private) 2 Playgrounds 2 Softball fields 1 Fishing spot 1 Golf course (public) 1 Sightseeing spot 1 Spectator facility 1 Tennis court (public) 1 Country club</p> <p>(1978 data)</p>	<p>Electric Source: Duke Power Company, Lockhart Power Company, Fairfield Electric Cooperative, Inc., and York Electric Cooperative, Inc.</p> <p>To augment present supplies Duke Power Company is constructing a nuclear power plant on the Catawba River, scheduled for completion 1979-1980.</p> <p>Heating Fuels Natural gas Source: Carolina Pipeline Company; local natural gas authorities are distributors Supply: adequate</p> <p>Water Supply Source: Chester Metropolitan Water District</p> <p>Sewage Disposal Municipal system</p> <p>(1978 data)</p>



III. OFF-POST FEATURES (Continued)

B. URBAN AREAS (Continued)

NAME AND LOCATION	POPULATION	HOUSING AVAILABILITY	EDUCATIONAL FACILITIES	MEDICAL FACILITIES	RECREATIONAL FACILITIES	UTILITIES AND SERVICES
Johnston, SC 33° 50' N 81° 48' W	1970: 2552 1975 est: 2502  (1977 data)	<u>Single-Family Units</u> Total units: 829 Rental units: 287 Vacancy rate: 6.7 percent Average sale price: \$12,500 Average rent per month: \$46  (1970 data)  <u>Multi-Family Units</u> Total units: 350 Average rent per month: 1 bedroom: \$135 2 bedroom: \$142 3 bedroom: \$155  (1977 data)	<u>Public Schools (Edgefield County School District)</u> 2 Elementary Schools 1977 enrollment: 783 Enrollment capacity: 843 1 Secondary School (Strom Thurmond Vocational High School) 1977 enrollment: 1134 Enrollment capacity: 1164  <u>Private Schools (Frances Ward-law Academy)</u> 1977 enrollment: 345  (1978 data)	Use Edgefield County Hospital facilities, county nursing home, mental health, and alcohol and drug abuse facilities.  Doctors Total: 2 Ratio: 1/1251  Dentists Total: 1 Ratio: 1/2502  (1976, 1977 data)	6 Basketball courts 5 Practice fields 4 Ballfields (baseball, softball, football) 4 Tennis courts (public) 2 Picnic areas 2 Playgrounds 2 Gymnasiums 1 Outdoor swimming pool  (1977 data)	<u>Electric</u> Source: South Carolina Electric and Gas  High load factor service with demands of 1000 kW or more.  <u>Heating Fuels</u> Natural gas Source: South Carolina Electric and Gas  Fuel oil is provided by two oil distributors and local liquefied petroleum gas distributors.  <u>Water Supply</u> Source: Saluda River; Edgefield County Water and Sewer Authority Maximum capacity: 15.1 x 10 <sup>6</sup> lpd (4 x 10 <sup>6</sup> gpd) Average daily demand: 5.7 x 10 <sup>6</sup> liters (1.5 x 10 <sup>6</sup> gal)  <u>Sewage Disposal</u> Municipal system consists of a 1.6-hectare (4-acre) oxidation pond and an Imhoff tank wastewater treatment plant.  Design flow capacity: 454,200 lpd (120,000 gpd) Average flow capacity: 363,360 lpd (96,000 gpd)  (1978 data)
Lancaster, SC 34° 42' 54" N 80° 46' 12" W	1970: 9186 1975 est: 8655 1980 projection: 10,000 1990 projection: 11,400 2000 projection: 13,800  (1977 data)	<u>Single-Family Units</u> Total units: 2943 Rental units: 1366 Vacancy rate: 6.6 percent Average sale price: \$16,900 Average rent per month: \$47  (1970 data)  <u>Multi-Family Units</u> Total units: 960 Average rent per month: Efficiency: \$115 1 bedroom: \$128 2 bedroom: \$145 3 bedroom: \$160  (1978 data)	<u>Public Schools (Lancaster County School Districts Nos. 2 and 4)</u> 8 Elementary Schools 1977 enrollment: 3515 Enrollment capacity: 3588 2 Junior High Schools 1977 enrollment: 1908 Enrollment capacity: at capacity 2 Senior High Schools 1977 enrollment: 1619 Enrollment capacity: at capacity  <u>Special Schools</u> Southside Elementary School 1977 enrollment: 194 Enrollment capacity: at capacity  <u>Vocational Schools</u> Lancaster County Vocational School  <u>Colleges and Universities</u> University of South Carolina, Lancaster Branch  (1978 data)	Elliott White Springs Hospital 149 beds 9 beds ICU/CCU  1 Nursing Home 44 beds  2 Nursing Care Centers 202 beds  1 Community Mental Health Center  1 Alcohol and Drug Abuse Center  Doctors Total: 29 Ratio: 1/298  Dentists Total: 6 Ratio: 1/1443  (1976, 1977 data)	22 Softball fields 8 Tennis courts (7 public, 1 private) 8 Football/soccer fields 7 Basketball courts 6 Sightseeing spots 6 Swimming pools 5 Multipurpose courts 5 Picnic areas 4 Gymnasiums 4 Spectator facilities 3 Hiking trails 2 Fishing spots 2 Golf courses (public) 1 Boating facility 1 Camp 1 Hunting area 1 Race track 1 Rifle range 1 Tot lot 1 Track and field facility 3 Country clubs  (1978 data)	<u>Electric</u> Source: Duke Power Company and Lynches River Electric Cooperative, Inc. Supply: ample  To augment present supplies Duke Power Company is constructing a nuclear power plant on the Catawba River, scheduled for completion 1979-1980.  <u>Heating Fuels</u> Source: Carolina Pipeline Company; county natural gas authorities in Lancaster are distributors Supply: adequate  <u>Water Supply</u> Source: City of Lancaster  (1978 data)
Lancaster Mills, SC 34° 43' N 80° 44' W  Lancaster Mills is an unincorporated town outside of the town of Lancaster.	1970: 2558 1980 projection: 2800 1990 projection: 3100 2000 projection: 3300  (1977 data)	<u>Single-Family Units</u> Total units: 863 Rental units: 330 Vacancy rate: 38.2 percent Average sale price: \$11,300 Average rent per month: \$30  (1970 data)  <u>Multi-Family Units</u> Total units: 300 Average rent per month: 1 bedroom: \$130 2 bedroom: \$142 3 bedroom: \$150  (1977 data)	Part of Lancaster County school district, see Lancaster above.	Use Lancaster's hospital, nursing care, mental health care, and alcohol and drug abuse facilities, see above.	Use Lancaster's recreation facilities, see above.	Utilities and services acquired through Lancaster, see above.
Manning, SC 33° 11' 42" N 80° 12' 36" W	1970: 4025 1975 est: 4420  (1977 data)	<u>Single-Family Units</u> Total units: 1253 Rental units: 416 Vacancy rate: 6.7 percent Average sale price: \$15,800 Average rent per month: \$47  (1970 data)  <u>Multi-Family Units</u> Total units: 897 Average rent per month: 1 bedroom: \$135 2 bedroom: \$148 3 bedroom: \$155  (1978 data)	<u>Public Schools (Clarendon District No. 2)</u> Manning Primary Elementary School 1977 enrollment: 828 Enrollment capacity: at capacity Manning Middle School 1977 enrollment: 830 Enrollment capacity: at capacity Manning Senior High School 1977 enrollment: 1016 Enrollment capacity: at capacity  <u>Private Schools</u> Stokes Christian Academy (kindergarten) 1977 enrollment: 10  Christian Academy First Baptist and Lawrence Manning Academy(both grades K through 12) 1977 enrollment: 706  <u>Vocational Schools</u> Clarendon County Vocational School  (1978 data)	Clarendon County Hospital 97 beds  1 Long Term Care Facility 64 beds  Doctors Total: 7 Ratio: 1/631  Dentists Total: 4 Ratio: 1/1105  (1977, 1978 data)	3 Ballfields 3 Tennis courts 2 Basketball courts 2 Multipurpose courts 2 Tot lots 1 Football field 1 Gymnasium 1 Picnic area 1 Playground 1 Softball field 1 Track and field facility 1 Movie theater  (1978 data)	<u>Electric</u> Source: Carolina Power and Light Supply: ample  <u>Heating Fuels</u> Natural gas Source: Carolina Pipeline Company  Six bulk stations provide fuel oil and liquefied petroleum gas.  <u>Water Supply</u> Source: eight deep wells Pumping capacity: 15.4 x 10 <sup>6</sup> lpd (4.068 x 10 <sup>6</sup> gpd)  <u>Sewage Disposal</u> Municipal system serves 1000 customers.  Type of treatment: trickling filter  (1978 data)
Newberry, SC 34° 16' 42" N 81° 37' 06" W	1970: 9218 1975 est: 8998  (1977 data)	<u>Single-Family Units</u> Total units: 2759 Rental units: 578 Vacancy rate: 18 percent Average sale price (new): \$16,500 Average rent per month: \$165  (1978 data)  <u>Multi-Family Units</u> Total units: 295 Vacant units: 35 Average rent per month: 1 bedroom: \$152 2 bedroom: \$175 3 bedroom: \$190  (1978 data)	<u>Public Schools (Newberry County School District)</u> 3 Elementary Schools 1977 enrollment: 1631 Enrollment capacity: 2125 Gallman Middle School (grades 7 through 8) 1977 enrollment: 560 Enrollment capacity: 825 Newberry High School 1977 enrollment: 1109 Enrollment capacity: 1000  <u>Private Schools</u> 3 Private Schools (2 kindergartens; 1 with grades K through 8) 1977 enrollment: 157	2 Hospitals 121 beds 7 beds ICU/CCU  2 Nursing Homes 102 beds  1 Mental Health Clinic  1 Alcohol and Drug Abuse Clinic  1 Detoxification and Half-way House  Doctors Total: 17 Ratio: 1/529	14 Park/playground facilities 9 Softball fields 5 Basketball courts 5 Multipurpose courts 4 Football/soccer fields 3 Swimming pools 3 Gymnasiums 3 Tennis courts 2 Spectator facilities 2 Tot lots 1 Golf course 1 Library Numerous historic sites  (1978 data)	<u>Electric</u> Source: Duke Power Company and Tri-County Cooperative, Inc. Supply: ample; excess capacity  <u>Heating Fuels</u> Natural gas Source: Duke Power Company and Tri-County Cooperative, Inc. Supply: adequate  <u>Water Supply</u> Source: treatment plant on the Saluda River shared with the town of Saluda



III. OFF-POST FEATURES (Continued)

B. URBAN AREAS (Continued)

NAME AND LOCATION	POPULATION	HOUSING AVAILABILITY	EDUCATIONAL FACILITIES	MEDICAL FACILITIES	RECREATIONAL FACILITIES	UTILITIES AND SERVICES
Newberry, SC (Continued)			<p><u>Vocational Schools</u> Newberry County Vocational Center</p> <p>Colleges and Universities Newberry College (Lutheran) 1977 enrollment: 831</p> <p>(1978 data)</p>	<p>Dentists Total: 5 Ratio: 1/1800</p> <p>(1976, 1977 data)</p>		<p><u>Sewage Disposal</u> Municipal system</p> <p>(1978 data)</p>
Orangeburg, SC 33° 29' 42" N 80° 51' 36" W	<p>1970: 14,101 1975 est: 15,809 1978 projection: 15,712</p> <p>(1977 data)</p>	<p><u>Single-Family Units</u> Total units: 4054 Rental units: 1819 Vacancy rate: 6.4 percent Average sale price: \$13,000 Average rent per month: \$40 to \$59</p> <p>(1970 data)</p> <p>There are two mobile home parks in Orangeburg, SC.</p> <p><u>Multi-Family Units</u> Total units: 708 Average rent per month: Efficiency: \$130 1 bedroom: \$145 2 bedroom: \$158 3 bedroom: \$170</p> <p>(1977 data)</p>	<p><u>Public Schools (Orangeburg County School District No. 5)</u> 7 Elementary Schools 1977 enrollment: 3261 Enrollment capacity: data not available 2 Middle Schools 1977 enrollment: 1723 Enrollment capacity: data not available Orangeburg-Wilkinson High School 1977 enrollment: 1650 Enrollment capacity: data not available</p> <p><u>State Supported Schools</u> Felton Laboratory School 1977 enrollment: 365</p> <p><u>Private Schools</u> 3 Kindergartens 1977 enrollment: 90</p> <p>5 Other Private Schools (combined include grades K through 12) 1977 enrollment: 1934</p> <p>Colleges and Universities South Carolina State College 1977 enrollment: 3897 Orangeburg-Calhoun Technical College 1977 enrollment: 1495 Claflin College 1977 enrollment: 911</p> <p><u>Vocational Schools</u> Calhoun-Orangeburg Vocational School</p> <p>(1978 data)</p>	<p>Orangeburg Regional Hospital 288 beds</p> <p>4 Nursing Homes</p> <p>Orangeburg Mental Health Center</p> <p>Doctors Total: 29 Ratio: 1/545</p> <p>Dentists Total: 18 Ratio: 1/878</p> <p>(1978 data)</p>	<p>17 Basketball courts 17 Tennis courts (1 private) 16 Playgrounds 6 Baseball fields 5 Multipurpose courts 5 Playfields 4 Gymnasiums 4 Softball fields 4 Spectator facilities 3 Football fields 3 Indoor recreation facilities 3 Passive recreation facilities 3 Picnic areas 3 Swimming pools (1 private) 3 Tot lots 2 Boating facilities 2 Fishing spots 2 Golf courses (1 private) 2 Nature trails 1 Archery facility 1 Arts and crafts facility 1 Historic point of interest 1 Public garden 1 Race track 1 Rifle range 1 Track facility</p> <p>(1978 data)</p>	<p><u>Electric</u> Source: South Carolina Electric and Gas, and a municipal co-operative electric company</p> <p><u>Heating Fuels</u> Natural gas Source: South Carolina Electric and Gas, and the Carolina Pipeline Company Supply: adequate</p> <p><u>Water Supply</u> Source: Orangeburg Municipal Water Works and private wells</p> <p><u>Sewage Disposal</u> Municipal system; plans to upgrade sewage and wastewater treatment systems.</p> <p>(1978 data)</p>
Shannontown, SC 33° 55' N 80° 57' W  Shannontown is an unincorporated town outside of the town of Sumter.	<p>1970: 7491</p> <p>(1970 data)</p>	<p><u>Single-Family Units</u> Total units: 2020 Rental units: 845 Vacancy rate: 5.5 percent Average sale price: \$13,500 Average rent per month: \$30</p> <p>(1970 data)</p> <p><u>Multi-Family Units</u> Total units: 1666 Average rent per month: Efficiency: \$144 1 bedroom: \$137 2 bedroom: \$150 3 bedroom: \$163</p> <p>(1978 data)</p>	<p>Part of Sumter school district, see below.</p>	<p>Use Sumter's hospital, nursing home, and mental health facilities, see below.</p>	<p>Use Sumter's facilities, see below.</p>	<p><u>Electric</u> Source: Carolina Power and Light Supply: ample</p> <p><u>Heating Fuels</u> Natural gas Source: Peoples Natural Gas Company, a Sumter municipal gas cooperative</p> <p>Other fuels are supplied by 15 oil and several liquefied petroleum gas distributors.</p> <p><u>Water Supply</u> Acquired through Sumter, see below.</p> <p>(1978 data)</p>
Shaw, SC 33° 57' 30" N 80° 27' 18" W  Shaw is an unincorporated town outside of Shaw Air Force Base.	<p>1970: 5819</p> <p>(1970 data)</p>	<p><u>Single-Family Units</u> Total units: 923 Rental units: 890 Vacancy rate: 3.5 percent</p> <p>(1970 data)</p> <p><u>Multi-Family Units</u> Total units: 350 Average rent per month: 1 bedroom: \$90 2 bedroom: \$125 3 bedroom: \$140</p> <p>(1977 data)</p>	<p><u>Public Schools (Sumter County School District No. 2)</u> 2 Elementary Schools 1977 enrollment: 1524 Enrollment capacity: 1573 High Hills Middle School 1977 enrollment: 831 Enrollment capacity: 695</p> <p>High school students attend school in Sumter, see below.</p> <p>(1978 data)</p>	<p>Residents not authorized to use Shaw Air Force Base medical facilities use hospital, nursing home, and mental health facilities in Sumter, see below.</p> <p>(1978 data)</p>	<p>Use recreational facilities at Shaw Air Force Base or those of Sumter, see below.</p> <p>3 Playgrounds 2 Playfields 1 Basketball court</p> <p>(1978 data)</p>	<p><u>Electric</u> Source: Carolina Power and Light Supply: ample</p> <p><u>Heating Fuels</u> Natural gas Source: Peoples Natural Gas Company, a Sumter municipal gas cooperative</p> <p>Other fuels are supplied by 15 oil and several liquefied petroleum gas distributors.</p> <p><u>Water Supply</u> Source: deep wells and the Shaw Air Force Base reservoir</p> <p>(1978 data)</p>
Springdale, SC 33° 57' 24" N 81° 08' 06" W	<p>1970: 2638 1975 est: 3529</p> <p>(1977 data)</p>	<p><u>Single-Family Units</u> Total units: 729 Rental units: 53 Vacancy rate: 7.5 percent Average sale price: \$38,000 Average rent per month: \$70</p> <p>(1977 data)</p> <p><u>Multi-Family Units</u> Total units: 125 Average rent per month: 1 bedroom: \$117 2 bedroom: \$142 3 bedroom: \$228</p> <p>(1978 data)</p>	<p><u>Public Schools (Lexington County District No. 2)</u> Springdale Elementary 1977 enrollment: 370 Enrollment capacity: 400</p> <p>Junior high students attend R.H. Fulmer Middle School, West Columbia, see below. 1977 enrollment: 848</p> <p>Senior high students attend Airport High School, West Columbia, see below.</p> <p>(1978 data)</p>	<p>Use Columbia's hospital, nursing home, mental health, and alcohol and drug abuse facilities, see above.</p>	<p>Use West Columbia's facilities, see below.</p> <p>1 Softball field 1 Playground 1 Tennis court</p> <p>(1978 data)</p>	<p><u>Electric</u> Source: South Carolina Electric and Gas, and Mid Carolina Electric Cooperative Supply: adequate Current capability: 3,200,000 kW/yr There are five generating plants, both coal and hydroelectric; coal is the primary source.</p> <p><u>Water Supply</u> Source: Congaree River; Columbia (municipal) Water Works Type of treatment: coagulation, sedimentation, filtration, fluoridation, chlorination, pH adjustment</p> <p>(1977 data)</p>
Springdale (u), SC 34° 42' N 80° 46' W  Springdale is an unincorporated town outside of the town of Lancaster.	<p>1970: 3193 1980 projection: 3400 1990 projection: 3700 2000 projection: 3900</p> <p>(1977 data)</p>	<p><u>Single-Family Units</u> Total units: 1057 Rental units: 382 Vacancy rate: 7.2 percent Average rent per month: \$64</p> <p>(1970 data)</p> <p><u>Multi-Family Units</u> Total units: 530 Average rent per month: 1 bedroom: \$130 2 bedroom: \$142 3 bedroom: \$150</p> <p>(1977 data)</p>	<p>Part of Lancaster County school district, see above.</p>	<p>Use Lancaster's hospital, nursing home, mental health, and alcohol and drug abuse facilities, see above.</p>	<p>Use Lancaster's facilities, see above.</p>	<p>Utilities and services acquired through Lancaster, see above.</p>



III. OFF-POST FEATURES (Continued)

B. URBAN AREAS (Continued)

NAME AND LOCATION	POPULATION	HOUSING AVAILABILITY	EDUCATIONAL FACILITIES	MEDICAL FACILITIES	RECREATIONAL FACILITIES	UTILITIES AND SERVICES
Sumter, SC 33° 55' 06" N 80° 20' 48" W	1970: 24,555 1975 est: 24,905 1980 projection: 27,489 1990 projection: 30,183 2000 projection: 32,877  (1977 data)	<u>Single-Family Units</u> Total units: 8456 Rental units: 3789 Vacancy rate: 11 percent Average sale price: \$15,525 Average rent per month: \$60  (1970 data)  <u>Multi-Family Units</u> Total units: 1666 Average rent per month: Efficiency: \$144 1 bedroom: \$150 2 bedroom: \$137 3 bedroom: \$163  (1978 data)	<u>Public Schools (Sumter School Districts Nos. 2 and 17)</u> <u>District 2</u> Cherryvale Elementary School 1977 enrollment: 412 Enrollment capacity: 431 Eastern Middle School 1977 enrollment: 762 Enrollment capacity: 823 Ebenezer Junior High School 1977 enrollment: 1085 Enrollment capacity: 991 2 Senior High Schools (Furman, Mayewood) 1977 enrollment: 1475 Enrollment capacity: 1258  <u>District 17</u> 6 Elementary Schools 1977 enrollment: 3603 Enrollment: 3725 2 Middle Schools 1977 enrollment: 2416 Enrollment capacity: 2250 3 High Schools 1977 enrollment: 3271 Enrollment capacity: 3175  There are plans to build new school buildings and reorganize those already in use.  <u>Private Schools</u> 4 Kindergartens 1977 enrollment: 65 6 Other Private Schools 1977 enrollment: 1561  <u>Colleges and Universities</u> University of South Carolina, Sumter Branch Sumter Area Technical College 1977 enrollment: 1315 Morris College 1977 enrollment: 689  <u>Vocational Schools</u> Sumter County Vocational School  (1978 data)	Tuomey Hospital 215 beds  5 Nursing Homes 392 beds  1 Mental Health Clinic  Doctors Total: 61 Ratio: 1/408  Dentists Total: 20 Ratio: 1/1245  (1977, 1978 data)	27 Tennis courts 21 Basketball courts 17 Baseball fields 12 Tot lots 10 Picnic areas 7 Playgrounds 4 Football fields 4 Gymnasiums 2 Ball fields 2 Indoor recreation facilities 2 Hiking trails 1 Garden 1 Multipurpose court 1 Olympic size swimming pool 1 Softball field 1 Spectator facility 3 Indoor movie theaters 1 Art gallery 1 Community concert association 1 Little theater group 1 Outdoor theater  (1978 data)	<u>Electric</u> Source: Carolina Power and Light Supply: ample  <u>Heating Fuels</u> Natural gas Source: Peoples Natural Gas Company, a municipal gas co-operative  Other fuels are supplied by 15 oil and several liquefied petroleum gas distributors.  <u>Water Supply</u> Source: deep wells Maximum capacity: 56.8 x 10 <sup>6</sup> lpd (15 x 10 <sup>6</sup> gpd) Peak daily demand: 45.4 x 10 <sup>6</sup> liters (12 x 10 <sup>6</sup> gal) Average daily demand: 22.7 x 10 <sup>6</sup> liters (6 x 10 <sup>6</sup> gal)  (1978 data)
West Columbia, SC 33° 59' 12" N 81° 04' 24" W	1970: 10,372 1975 est: 13,320  (1977 data)	<u>Single-Family Units</u> Total units: 4050 Rental units: 1820 Vacancy rate: 6.2 percent Average sale price: \$34,000 Average rent per month: \$245  <u>Multi-Family Units</u> Total units: 744 Vacant units: 13 Vacancy rate: 1.5 percent Average rent per month: 1 bedroom: \$164 2 bedroom: \$164 3 bedroom: \$236  (1978 data)	<u>Public Schools (Lexington County School District No. 2)</u> 7 Elementary Schools 1977 enrollment: 3636 Enrollment capacity: 3550 3 Middle Schools (grades 4 through 8) 1977 enrollment: 2155 Enrollment capacity: 2300 Airport Senior High School 1977 enrollment: 1750 Enrollment capacity: 1800  <u>State Supported School</u> Wil Lou Gray Opportunity School (grades 1 through 12; coeducational boarding school) 1977 enrollment: 600  <u>Private Schools</u> 6 Elementary Schools 1977 enrollment: 188 4 Private Academies (grades K through 12) 1977 enrollment: 272  (1978 data)	Use Columbia's hospital facilities, see above.  Lexington County Hospital 255 beds 4 beds ICU 5 beds ICU/CCU  1 Nursing Home 120 beds  1 Alcohol and Drug Abuse Clinic  Doctors Total: 39 Ratio: 1/342  Dentists Total: 18 Ratio: 1/740  (1976, 1977 data)	22 Softball fields 20 Multipurpose courts 18 Playgrounds 9 Baseball fields 9 Basketball courts 7 Parks/playgrounds 7 Football/soccer fields 6 Tennis courts 5 Tot lots 4 Gymnasiums 3 Spectator facilities 2 Golf courses 2 Swimming pools 1 Public library  (1978 data)	<u>Electric</u> Source: South Carolina Electric and Gas, and four electric co-operatives (Central Electric Power Cooperative, Inc., Tri-County Cooperative, Inc., Mid Carolina Electric Cooperative, and Fairfield Electric Cooperative, Inc.) Combined supply: 4 x 10 <sup>8</sup> kW with reserve capacity of more than 20 percent  <u>Heating Fuels</u> Natural gas Source: Carolina Pipeline Company and South Carolina Electric and Gas Supply: adequate  <u>Water Supply</u> Source: Broad River; Columbia Water Works Average consumption: 9.5 x 10 <sup>8</sup> lpd (2.5 x 10 <sup>6</sup> gpd) Peak consumption: 14 x 10 <sup>8</sup> lpd (3.7 x 10 <sup>6</sup> gpd) Pumping capacity: 22.7 x 10 <sup>6</sup> lpd (6 x 10 <sup>6</sup> gpd) Type of treatment: coagulation, sedimentation, filtration, fluoridation, chlorination, pH adjustment  (1977 data)
Williston, SC 33° 24' N 81° 25' W	1970: 2594 1975 est: 2867 1978 projection: 5470  (1977 data)	<u>Single-Family Units</u> Total units: 1534 Rental units: 574 Vacancy rate: 3 percent Average sale price: \$7900 Average rent per month: \$40 to \$59  (1970 data)  <u>Multi-Family Units</u> Total units: 455 Average rent per month: 1 bedroom: \$120 2 bedroom: \$135 3 bedroom: \$150  (1977 data)	<u>Public Schools (Williston School District No. 29)</u> Kelly Edwards Elementary School (grades K through 6) 1977 enrollment: 308 Enrollment capacity: 625 Williston-Elko High School (grades 7 through 12) 1977 enrollment: 349 Enrollment capacity: 700  (1978 data)	Williston is served by Barnwell County Hospital, nursing care, and mental health care facilities in Barnwell, SC. 61 beds  Doctors Total: 2 Ratio: 1/1434  Dentists Total: 1 Ratio: 1/2867  (1978 data)	4 Playgrounds 4 Tennis courts 2 Ball fields 2 Basketball courts 2 Softball/baseball fields 1 Golf course (private) 1 Miniature golf course 1 Picnic area 1 Shuffleboard court 1 Swimming pool (private)  (1978 data)	<u>Electric</u> Source: Carolina Power and Light Supply: ample  There is a proposed nuclear power plant planned for Barnwell County.  <u>Heating Fuels</u> Natural gas Source: Carolina Pipeline Company Supply: adequate  <u>Water Supply</u> Source: county water authority  <u>Sewage Disposal</u> Source: county water authority  (1978 data)
Winnaboro, SC 34° 22' 30" N 81° 05' 12" W	1970: 3411 1975 est: 3257  (1977 data)	<u>Single-Family Units</u> Total units: 1454 Rental units: 500 Vacancy rate: 6.3 percent Average sale price: \$10,600 Average rent per month: \$146  <u>Multi-Family Units</u> Total units: 365 Average rent per month: Efficiency: \$100 1 bedroom: \$150 2 bedroom: \$165 3 bedroom: \$186  (1978 data)	<u>Public Schools (Fairfield County School District)</u> 4 Elementary Schools 1977 enrollment: 1795 Enrollment capacity: 1945 Fairfield Junior High School 1977 enrollment: 678 Enrollment capacity: 828 2 Senior High Schools (Fairfield AVC, Winnaboro High School) 1977 enrollment (WHS): 817 Enrollment capacity: 967  <u>Vocational Schools</u> Fairfield County Vocational School  (1978 data)	Fairfield Memorial Hospital 54 beds  Fairfield County Mental Health Clinic  1 Alcohol and Drug Abuse Clinic  Doctors Total: 6 Ratio: 1/543  Dentists Total: 4 Ratio: 1/814  (1976, 1977 data)	7 Softball fields 4 Playgrounds 3 Baseball fields 3 Basketball fields 3 Football/soccer fields 3 Tot lots 2 Gymnasiums 2 Multipurpose courts 2 Parks/playgrounds 2 Picnic areas 1 Swimming pool 1 Public library Numerous historic sites  (1978 data)	<u>Electric</u> Source: South Carolina Electric and Gas, Fairfield Electric Co-operative, Inc., and Central Electric Power Cooperative, Inc. Supply: ample; excess capacity  <u>Heating Fuels</u> Natural gas Source: South Carolina Electric and Gas Supply: adequate  <u>Water Supply</u> Source: Winnaboro Municipal Water System  <u>Sewage Disposal</u> Winnaboro operates one of two sewage treatment plants. Treatment facilities are being upgraded to meet EPA effluent requirements.  (1978 data)

\* Doctor/population and dentist/population ratios for each city derived using most recent population estimate.  
\* lpd = liters per day; gpd = gallons per day.  
\* CCU = Coronary Care Unit; ICU = Intensive Care Unit.



III. OFF-POST FEATURES (Continued)

C. PORTS

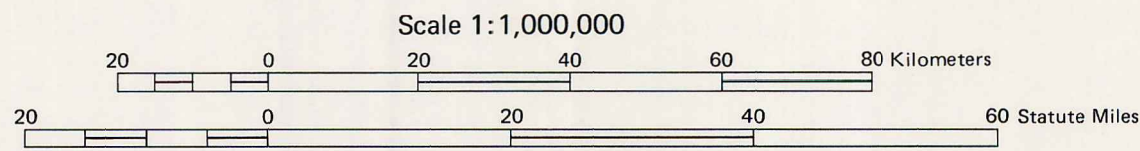
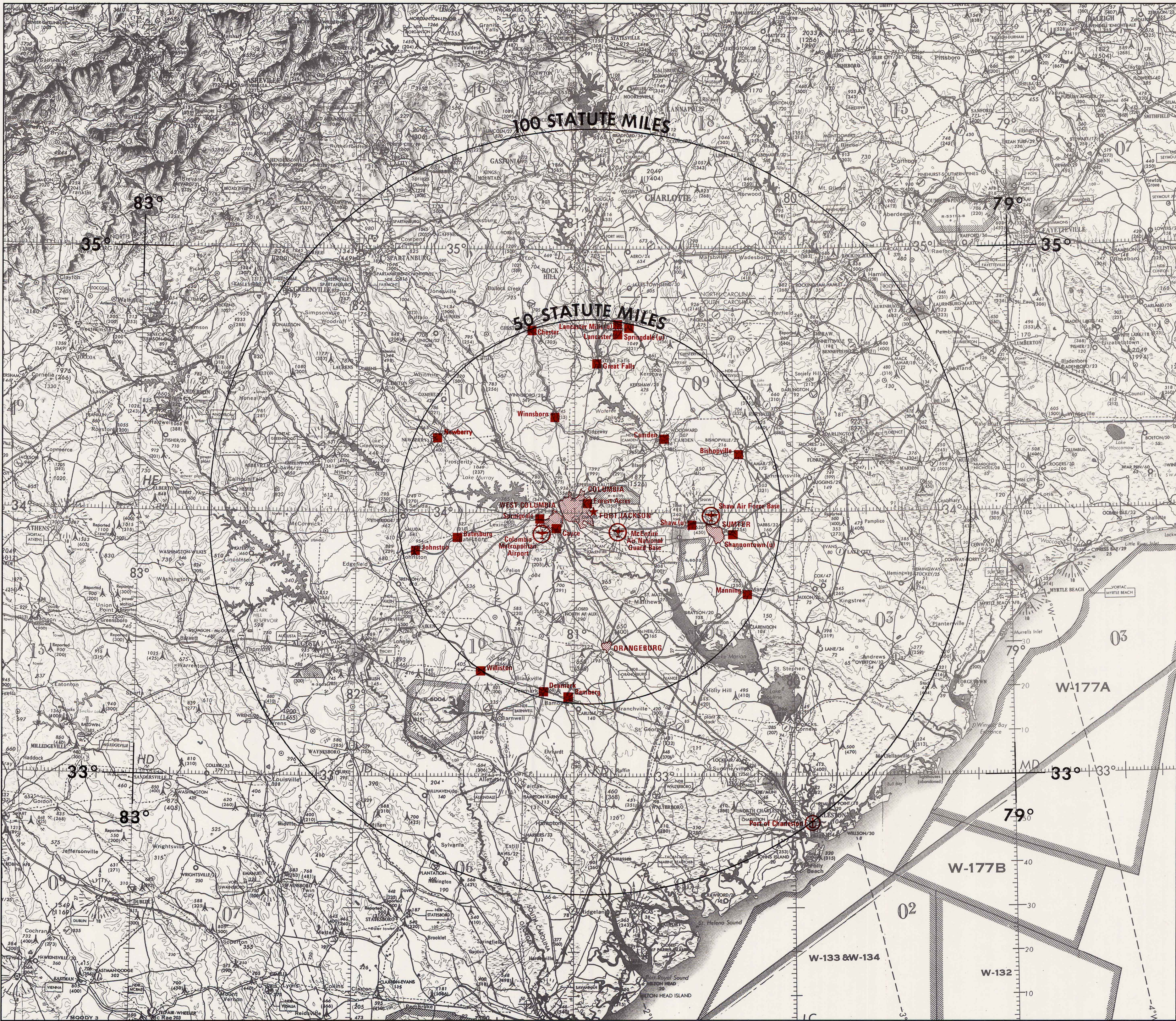
The Port of Charleston, South Carolina, currently ranks eleventh of major United States ports in cargo handling and leads all South Atlantic ports in handling containerized cargo. More than 1500 ships move through the port each year. Port facilities include U.S. Navy, U.S. Army, and U.S. Coast Guard facilities as well as civilian facilities. Interstate highways, railroads, airports, and the Intracoastal Waterway provide an excellent system for moving men and cargo through the port.

NAME AND LOCATION	TYPE AND GENERAL CONDITIONS	FACTORS LIMITING LARGEST VESSEL	HYDROLOGIC CONDITIONS AND UNUSUAL GEOPHYSICAL CONDITIONS	PIERS AND WHARVES	MECHANICAL HANDLING FACILITIES	STORAGE FACILITIES	PORT CLEARANCE FACILITIES	REMARKS
Port of Charleston (Customhouse Wharf); 32°47'N, 79°55'W.	Improved natural river harbor; good condition; cargo handled (1976): 8,773,764 metric tons (9,664,865 short tons).	<p><u>Approaches</u></p> Minimum depth MLW* 11 m (36 ft); minimum width 182.9 m (600 ft); overhead clearance at MLW for Drum Island bridge 45.7 m (150 ft). <p><u>Anchorage</u></p> Two special anchorages, maximum diameter 426.7 m (1400 ft), minimum depth MLW 8.8 to 11 m (29 to 36 ft); general anchorages, area 106 hectares (236 acres), minimum depth MLW 9.5 to 11 m (31 to 36 ft). <p>CIVILIAN FACILITIES</p> <p><u>Alongside Berths</u></p> Deepest berth 11.3 m (37 ft); maximum length 548 m (1798 ft); most of the major piers are parallel to the channel and clearance is limited by channel width and navigation requirements of other vessels using the channel. <p><u>MILITARY FACILITIES*</u></p> <p><u>Alongside Berths</u></p> Deepest berth 10.7 m (35 ft); maximum length 457 m (1500 ft); minimum clearance between piers 121.9 m (400 ft); three piers parallel the channel and clearance is limited by channel width and navigation requirements of other vessels using the channel.	<p><u>Tides</u></p> Semidiurnal (usually two high and two low tides each day); mean tidal range at Customhouse Wharf 1.74 m (5.7 ft); maximum high tide,3.26 m (10.7 ft); minimum low tide, -1.07 m (-3.5 ft). <p><u>Unusual Conditions</u></p> Hurricane season, 1 June to 30 November.	<p>CIVILIAN FACILITIES</p> 33 piers: 19 general purpose, nine petroleum, five service craft. About 15 small piers are also on Shem Creek (shallow water) and the Wando River (about 16 km or 10 mi upstream from its mouth). <p>Types of construction: most major piers have concrete decks with concrete or steel piles; some piers have timber decks, timber piles, or steel sheet piles.</p> 36 to 46 berths, depending on length of ships: length (maximum and minimum) 548 m (1798 ft) to 11 m (36 ft); depth alongside (maximum and minimum) 12.2 m (40 ft) to zero; height of decks above MLW (maximum and minimum) 4.3 m (14 ft) to 2.9 m (9.6 ft). <p><u>MILITARY FACILITIES</u></p> 27+ piers: 17 general purpose, three service craft, one mooring, one fuel, more than five small boats. <p>Types of construction: most major piers have concrete decks with concrete or steel piles; some piers have timber decks, timber piles, or steel sheet piles.</p> 42 to 83 berths, depending on length of ships (nesting may be used to increase number of berths): length (maximum and minimum) 457 m (1500 ft) to 48.8 m (160 ft); depth alongside (maximum and minimum) 10.7 m (35 ft) to 6.1 m (20 ft); height of decks above MLW for most of the major berths range from 3.4 m (11 ft) to 11.8 m (13 ft).	<p>CIVILIAN FACILITIES</p> More than 40 cranes including gasoline mobile cranes, bridge cranes, gantry cranes, container cranes (at least five), and shear leg derricks. Lift capacity of these cranes varies from 1.8 metric tons ( 2 short tons) for a gasoline mobile crane to 363 metric tons (400 short tons) for one of the shear leg derricks. A wide variety of other cargo handling equipment is available at most piers. <p><u>MILITARY FACILITIES</u></p> Several 13.6 to 18.2 metric ton (15 to 20 short ton) cranes on piers; floating cranes, one 22.7 metric tons (25 short tons), and two 90.8 metric tons (100 short tons); fuel and oil barges also available.	<p>CIVILIAN FACILITIES</p> Covered storage 129,698 m <sup>2</sup> (1,396,100 ft <sup>2</sup> ); open storage 800,148 m <sup>2</sup> (8,613,000 ft <sup>2</sup> ); refrigerated storage approximately 24,386 m <sup>3</sup> (861,100 ft <sup>3</sup> ); petroleum products storage approximately 962 x 10 <sup>6</sup> liters (6,043,800 barrels). <p><u>MILITARY FACILITIES</u></p> Covered storage 219,151 m <sup>2</sup> (2,359,000 ft <sup>2</sup> ); open storage 78,965 m <sup>2</sup> (850,000 ft <sup>2</sup> ); refrigerated storage 3795 m <sup>3</sup> (134,000 ft <sup>3</sup> ); petroleum products storage approximately 111 x 10 <sup>6</sup> liters (700,000 barrels).The 364-hectare (900-acre) Charleston army depot has an additional 46,914 m <sup>2</sup> (505,000 ft <sup>2</sup> ) of covered storage and some open storage space.	<p><u>Railroads Serving Port Area</u></p> Seaboard Coast Line and Southern Railway (line-haul carriers); North Charleston Terminal Company, Port Terminal Railroad of South Carolina and Port Utilities Commission of Charleston, SC (switching lines). Seaboard Coast Line provides direct connection to Fort Jackson. Number of rail metric tons handled in port area not available; piggy-back container traffic (including mini land bridge) has caused significant increases in port railroad operations in the last few years. <p><u>Highways Serving Port Area</u></p> Interstate 26 and U.S. Highways 78/178 (to Columbia, SC and Fort Jackson); U.S. Highway 52 (to Florence, SC); U.S. Highway 17 (north-south along Atlantic coast). <p><u>Other</u></p> Intracoastal Waterway serves the port from east and west.	Study has been authorized for a 12.2 m (40 ft) deep navigation channel for the port. If approved all 9.1 m (30 ft) channels would be deepened to 11 m (36 ft), and 10.7 m (35 ft) channels to 12.2 m (40 ft) by about 1980.

\*MLW refers to mean low water.  
\*Military facilities include those of the U.S. Army, U.S. Navy, and U.S. Coast Guard.



FORT JACKSON, SOUTH CAROLINA  
TERRAIN ANALYSIS



OFF-POST FEATURES

- Urban Area
- Airfield
- Cantonment Area
- Port

Prepared by Dames & Moore, Washington, DC, under the direction of the Terrain Analysis Center, U.S. Army Engineer Topographic Laboratories, Fort Belvoir, Virginia, April 1979.



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IV. LIST OF SOURCES (Continued)

105. AMERICAN AUTOMOBILE ASSOCIATION ROADMAP: NORTH CAROLINA, SOUTH CAROLINA. Scale 1 inch = approximately 17 miles or 27.4 kilometers. Fall 1977-1978. Falls Church, VA.

106. CENTRAL MIDLANDS REGION CENTRAL DEVELOPMENT PLAN MAP. No scale. July 1977. Central Midlands Regional Planning Council, Columbia, SC.

107. LAND USE MAP, LANCASTER COUNTY, SOUTH CAROLINA. Scale 1 inch = 2 miles. June 1977. Catawba Regional Planning Council, Rock Hill, SC.

108. MAP - GREATER COLUMBIA MULTI-FAMILY HOUSING DEVELOPMENTS. Scale 1 inch = 2000 feet. 1977. Central Midlands Regional Planning Council, Columbia, SC.

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113. Mr. Roy Blades. September 1978. Sanitation Branch, Utilities Division, Directorate of Facilities Engineering, Fort Jackson, SC. Interviews concerning wells, ground water, and water and sewerage service to cantonment.

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123. Mr. G. Dunlop. September 1978. Directorate of Communications Command, Fort Jackson, SC. Interview concerning telecommunications on the reservation.

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129. Mr. Franklin Cooper. December 1978. Master Planner, Directorate of Facilities Engineering, Fort Jackson, SC. Interviews and telephone conversations concerning non-urban culture features.

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133. Mr. Eugene B. Borry. 4 October 1978. Deputy Base Civil Engineer, Shaw Air Force Base, Shaw, SC. Letter concerning the airfield.

134. Mr. T.J. Bratton. January 1979. District Superintendent, Chester School District, Chester, SC. Telephone conversation concerning school capacities.

135. Mr. W.A. Brooks. 14 September 1978. Transportation Planner, Central Midlands Regional Planning Council, Columbia, SC. Interview concerning traffic and commuting patterns in and around Columbia, SC.

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137. Mr. R.L. Coker. January 1979. District Superintendent, Bamberg School District No. 1, Bamberg, SC. Telephone conversation concerning school capacities.

138. Mr. Cole. November 1978. South Carolina Electric Cooperative, Columbia, SC. Telephone conversation concerning South Carolina Electric Cooperative's service area.

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140. Dr. Donald L. Crolley. January 1979. Area Superintendent, Lancaster County School District Area 4, Lancaster, SC. Telephone conversation concerning school capacities.

141. Mr. Reynolds Davis. January 1979. District Superintendent, Sumter County District No. 2, Sumter, SC. Telephone conversation concerning school capacities.

142. Mr. Richard Demarest. November 1978. Three Rivers Health Systems Agency, Columbia, SC. Telephone conversation concerning health care facilities.

143. Ms. Judy Derrick. November 1978. Education Products Center, Columbia, SC. Telephone conversations concerning enrollment in South Carolina schools.

144. Mr. Robert Gassler. September 1978. City Planner, Central Midlands Regional Planning Council, Columbia, SC. Interview concerning redevelopment areas in and around Columbia, SC.

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146. Mr. J.W. Gilliam. October 1978. County Extension Agent-Leader, College of Agricultural Sciences, Cooperative Extension Service, Clemson University, Edgefield, SC. Telephone conversation concerning land use plans for Edgefield County, SC.

147. Mr. Arthur Goff. January 1979. District Superintendent, Fairfield County School District, Winnsboro, SC. Telephone conversation concerning school capacities.

148. Dr. Bill M. Halcombe. January 1979. District Superintendent, Richland County District No. 1, Columbia, SC. Telephone conversation concerning school capacities.

149. Ms. Cathy Spann Hampton. October - November 1978. Statistical Analyst, Pee Dee Regional Health Systems Agency, Florence, SC. Telephone conversations concerning medical facilities in Bishopville, Manning, Camden, and Shaw (u), and Sumter, SC.

150. Mr. D.E. Hay. September - October 1978. Vice President, Customer Operations, South Carolina Electric and Gas, Columbia, SC. Telephone conversation concerning SCE&G service area.

151. Mr. Charles Helsel. November 1978. Assistant Director, Santee-Lynches Council of Governments, Sumter, SC. Correspondence concerning housing, recreation facilities, and utilities in Sumter, Bishopville, Manning, Camden, and Shaw (u), SC.

152. Mr. Sid Hopkins. January 1979. Administrative Assistant for Planning, Richland County School District No. 2, Columbia, SC. Telephone conversation concerning school capacities.

153. Mr. Gerry Howard. November 1978. Central Electric Power Cooperative, Columbia, SC. Telephone conversation concerning Central Electric Power Cooperative's service area.

154. Ms. Jo Ann Kerrey. November - December 1978. Chief Supervisor, Office of Research, State Department of Education, Columbia, SC. Telephone conversations and correspondence concerning South Carolina school systems.

155. Mr. James B. Kirkland. January 1979. County Superintendent, Lee County School District, Bishopville, SC. Telephone conversation concerning school capacities.

156. Mr. Joseph Klein. January 1979. District Superintendent, Sumter County School District No. 17, Sumter, SC. Telephone conversation concerning school capacities.

157. Mr. Wayne F. Koempel. September - November 1978. Research Planner, Central Midlands Regional Planning Council, Columbia, SC. Interview and telephone conversations concerning housing information.

158. Mr. Glen Larson. September - December 1978. Regional Planner, Catawba Regional Planning Council, Rock Hill, SC. Telephone conversations and correspondence concerning Chester and Lancaster Counties, SC.

159. Ms. Debra McAbee. November 1978. Housing Planner, Lower Savannah Council of Governments, Aiken, SC. Telephone conversation concerning housing availability and pricing in Bamberg, Denmark, Orangeburg, and Williston, SC.

160. Mr. Michael D. McAnelly. September 1978. Environmental Planner, Central Midlands Regional Planning Council, Columbia, SC. Interview concerning utilities and services in Richland and Lexington Counties, SC.

161. Ms. Debra McPherson. November 1978. Palmetto-Low Country Health Systems Agency, Inc., Summerville, SC. Telephone conversation concerning medical facilities in Bamberg, Williston, Denmark, and Orangeburg, SC.

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163. Mr. Bill Millett. September - November 1978. Director, Santee-Lynches Council of Governments, Sumter, SC. Telephone conversation concerning housing information, recreation facilities, and utilities in Bishopville, Camden, Manning, Shaw (u), and Sumter, SC.

164. Mr. Howard E. Moody. January 1979. District Superintendent, Edgefield County School District, Johnston, SC. Telephone conversation concerning school capacities.

165. Mr. Gerald Mount. January 1979. Business Manager, Newberry County School District, Newberry, SC. Telephone conversation concerning school capacities.

166. Mr. Morrison J. Parrott. September - October 1978. Planning Director, Upper Savannah Council of Governments, Greenwood, SC. Telephone conversation concerning Saluda and Edgefield Counties, SC.

167. Mr. John W. Plaxico. January 1979. Area Superintendent, Lancaster County School District Area 2, Lancaster, SC. Telephone conversation concerning school capacities.

168. CPT John Potts. 22 September 1978. Base Engineer, McEntire Air National Guard Base, Eastover, SC. Interview concerning the airfield.

169. Dr. Carl B. Ramsey. January 1979. District Superintendent, Clarendon County School District No. 2, Manning, SC. Telephone conversation concerning school capacities.

170. Mr. W.C. Rawkins. January 1979. District Superintendent, Lexington County School District No. 5, Columbia, SC. Telephone conversation concerning school capacities.

171. Mr. Richardson. November 1978. Mid Carolina Electric Cooperative, Inc., Lexington, SC. Telephone conversation concerning power usage in Batesburg, SC.

172. Mr. Francis A. Snelgrove. January 1979. District Superintendent, Kershaw County School District, Camden, SC. Telephone conversation concerning school capacities.

173. Mr. Jerry Toms. January 1979. Kershaw County School District, Camden, SC. Telephone conversation concerning school capacities.

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175. Mr. Owen Watts, Jr. 13 September 1978. United Farm Realty, Columbia, SC. Telephone conversation concerning prices and availability of homes in Columbia, Cayce, and West Columbia, SC.

176. Mr. Herbert A. Wood. January 1979. District Superintendent, Lexington County School District No. 2, West Columbia, SC. Telephone conversation concerning school capacities.

177. Mr. Stephen Yehl. September 1978. Economic Development Commission, Columbia, SC. Interview concerning Greater Columbia, Richland, and Lexington Counties, SC.

178. Mrs. Barbara Zeigler. 1979. Secretary to District Superintendent, Williston School District No. 1, Williston, SC. Telephone conversation concerning school capacities.